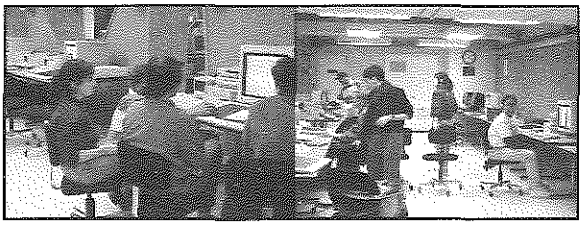
Academic Computing and Networking at NYU



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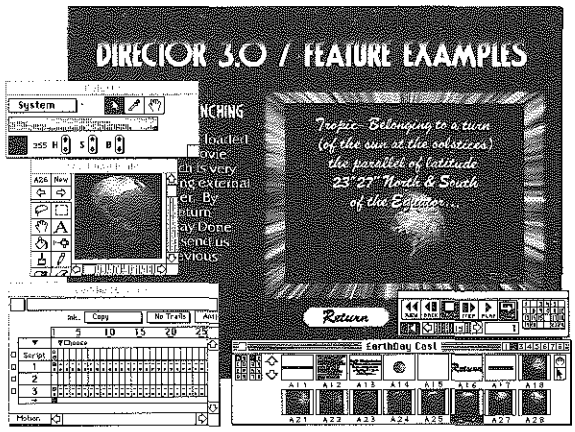

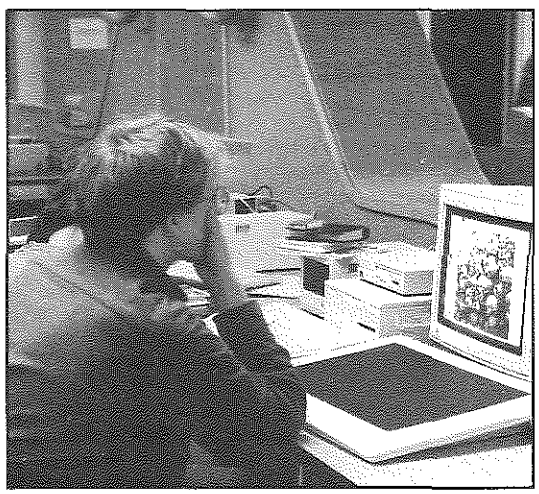

At the ACF's Arts and Media Studio, story on page 4.

Academic Computing and Networking at NYU

Vol 2./No. 3 New York University March 1992

ACADEMIC COMPUTING AND NETWORKING AT NYU is edited and published by New York University's Academic Computing Facility (ACF). Its scope includes information about computing and networking activities at NYU's various schools, departments and administrative units.

Copies of *Academic Computing and Networking at NYU* are mailed to University faculty and staff and are also available from the ACF's Documentation Office (Room 306 Warren Weaver Hall). Students holding ACF *individual* computer accounts are included automatically in the newsletter's mailing list.

In this issue of the newsletter, we have experimented with a new "look." The type faces used in the issue are Gill Sans for headlines, Adobe Garamond for text and Polo-SemiScript for the section dividers. As with any new design, we will be making refinements in it during the next several issues.

We welcome your comments and suggestions about our design, the articles in this issue, and articles for future issues of the newsletter. Contributions from sources within the University are invited for consideration by the editors; please call 998-3036 for more information. Unless otherwise indicated, articles are authored by members of the ACF staff.

Those odd notes below many of the bylines in this issue of the newsletter are electronic mail (E-mail) addresses. If you do not use E-mail but would like to, see the box in the *Networks and Network Services* section of this newsletter.

This issue was prepared on Apple Macintosh IIsi and Macintosh SE microcomputers, using Adobe Illustrator, Adobe Photoshop, Aldus PageMaker, Claris MacDraw Pro, and Xerox MacImage.

Camera-ready copy for this issue was produced using a Varityper 4000 imagesetter (please see p. 29 for information about this new ACF service) and an Apple LaserWriter IINT printer.

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From the Director

George Sadowsky
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Notes on some recent changes and our plans for further progress.

Since my last note, we have been making a variety of changes and plans at the ACF. In this issue, I'd like to comment upon some of our progress in and plans for our microcomputer laboratories. I'd also like to share with you some thoughts regarding new ways in which we will probably be supporting our scientific computing clients in the NYU community. Finally, I want to tell you about our plans for external evaluations of our computing and networking activities this year.

Microcomputer Lab Enhancements

Since the beginning of the school year, we've taken initial steps to modernize the microcomputer labs which we provide for NYU students and faculty. In September, we replaced most of the terminals at the 14 Washington Place lab with modern Macintosh systems. In January, we added a number of new and faster MS-DOS systems to the Education Building PC lab to provide additional capacity for students in computer science and other classes using this equipment. At the same time, for logistical reasons, we swapped the two labs, moving the Macintoshes to the Education Building and the PC's to 14 Washington Place, and we installed a (largely) Macintosh-based Arts and Media Studio in the remaining unused bay in the Education Building's lab. While this entailed work on our part and some accommodation for change on your part, we believe that these labs are now structured to provide more flexible and better service to you for the next several years.

As part of our restructuring activity, we have provided office space for instructors in each of these labs. If you are teaching a course that requires your students to use either of these facilities, you may book consultation hours in one of these offices and plan to meet with your students there. You can expect to be able to use a desk with a computer on it, of the type installed in the rest of the lab. Contact Jac Fried (998-3436) for the 14 Washington Place lab, or Howard Fink (998-3399) for the Education Building lab, to reserve your hours.

We have two other microcomputer labs: one in Tisch Hall and another at the Third Avenue North Residence Hall. Right now, we're planning to upgrade them significantly over the next year. Please give us your suggestions for ways in which we can do this that would be especially helpful to you.

We continue to negotiate with software suppliers to increase the richness of the software available in the laboratories for your use. As a result of several years of such negotiation, we have managed a breakthrough with Wolfram Research which will allow considerably more widespread availability of *Mathematica* on lab machines. Mathematica, a very powerful tool for doing both computational and symbolic mathematics, should be a part of every mathematician's and every scientist's tool kit. As we install more copies for your use, we'll expand our education program to help you learn about Mathematica and use it in your coursework and your research.

Developments in Scientific Computing

For the first 25-30 years of computing, the cost performance of computing hardware was characterized by *economies of scale*, which meant that performance increased more than linearly as a function of cost. The computational power that a given amount of money could buy was maximized by purchasing the largest machine affordable. This condition was a reflection

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Continued from previous page.

of the underlying engineering technology, and supported the dominance of large computing systems for a substantial period of time.

Starting in the 1960's and strengthening over time, the economies of hardware centralization began to be offset by the diseconomies resulting from centralized, or remote, control. This trend led first to interactive time sharing, then to minicomputers, and finally to the personal computers that are so plentiful today. During the last 15 years, the technology underlying computer hardware production shifted to microscopic photolithography techniques that first reduced and now are eliminating many advantages of scale in computation.

We must be able to regard NYU-NET as a utility, providing transport for information in an invisible yet reliable manner.

The result today is that it is now cheaper in many circumstances to maximize processing power by purchasing several smaller computers, each of which is relatively powerful, instead of one very powerful and very large machine. Such groups of smaller machines are often called *farms* or *clusters*; often the word RISC is used with one of these terms, connoting the origin of such clusters as clusters of reduced instruction set computers.

The ACF is actively exploring the creation of such a RISC farm of small, powerful processors, and is likely to establish one soon. Such a cluster has the capability to increase the total processing power available centrally to NYU faculty, students and staff by an order of magnitude at a cost that is modest relative to that of previous acquisitions of large computers. Such a configuration may also be regarded as a loosely coupled system of parallel processors, that would serve as an initial configuration for parallel computing experiments.

External Evaluations

This year, two external evaluation teams will visit NYU to assess the University's position in academic computing and in networking.

The first team will focus upon NYU-NET and will assess its operation, reliability, management, extension and evolution. We feel this is essential if NYU-NET is to continue to expand at NYU and to continue its evolution toward becoming a ubiquitous network, connecting faculty, staff and students with both internal and external information resources in support of the University's mission. We must be able to regard NYU-NET as a utility, providing transport for information in an invisible yet reliable manner. This team will bring an experienced perspective to NYU and will assess our current status in networking and advise us how it can be extended and strengthened.

The second team will evaluate how the ACF fulfills its mission of providing academic information technology support to the campus. We need to assess our performance in this area and compare ourselves with our peers, borrowing ideas from them when we can. This evaluation will go far to ensuring that we are using our limited resources as best we can to provide such support, as well as helping us to be competitive with our peer institutions in supporting both instruction and research.

Both evaluation teams will meet with broad segments of the NYU community during the course of their reviews, including service providers, users, administrators, and faculty committees. While such external reviews are not mandated, they are important to ensure that we do not become either parochial in our outlook or self-satisfied with our performance within the confines of our own local environment. We look forward to the findings of these reviews, and we will share their results in an appropriate manner with groups within the NYU community.

Your comments on these issues, as well as on any other aspects of this newsletter, are welcome. ■

New NYU Colloquia on Computers and Higher Education

by Estelle Hochberg
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Now into their third year, NYU's popular colloquia on innovative uses of computers in University instruction and research will continue during the Spring of 1992.

Sponsored by the Faculty of Arts and Sciences (FAS) and the Academic Computing Facility (ACF) with support from IBM Corporation and Apple Computer, Inc., the talks are open to all NYU faculty, staff and students. As we go to press, several interesting new presentations are planned. (Please see photo and caption for a brief description of this semester's first colloquium.)

Oxford's network-accessible database of ancient Greek pottery. The Beazley Archive of ancient Greek pottery will be featured in a presentation on April 15, 2:30 pm in Room 101 in Warren Weaver Hall. Classical archaeologists Donna Carol Kurtz, Thomas Mannack and Melanie Mendonça will cover the historical background of the Archive and its online database, its new association with a major European Economic Community telecommunications project, the structure of the database and means of access to it.

Dr. Kurtz, the Beazley Archivist, is also a University lecturer in classical archaeology and art at Oxford University. Thomas Mannack is a research officer, and Melanie Mendonça a research assistant, at the Beazley Archive. (An article on Oxford's Beazley Archive and its online database of information on ancient Greek pottery appeared in the September 1991 issue of this newsletter.)

continued on page 30

Learning from Learning: Innovative uses of computers in Apple's Vivarium Program

Lori Weiss and Kimberly Rose, right, of Apple Computer, Inc., presenting the first colloquium of 1992 on February 7 before a capacity audience. Titled *Learning from Learning: Educing Tomorrow's Technology from Children's Intuitive Interactions with Computers Today*, the talk's focus was the implementation of the Apple Vivarium Program in the Los Angeles Open School. Under this Apple-sponsored program, computers are used in innovative ways both to enhance children's learning and to do long-range research on children's intuitive thinking and on how people of all ages learn and think.

The talk was sponsored by the Academic Computing Facility with support from Apple Computer. For those who were unable to attend the colloquium, or for others who would like to learn more about the Apple Vivarium Program, the ACF has obtained a copy of a videotape of a British television program, "School's Out," which featured Vivarium. Segments of this tape were played at the February 7 talk to show examples of the Program in operation. Individuals interested in viewing the tape should contact the ACF's Faculty Microcomputer Lab (998-3044). Look for a more complete report of the talk in the May issue of this newsletter.

Software at the New ACF Studio

Arts and Media Tools for Images, Interaction, Sound and Music

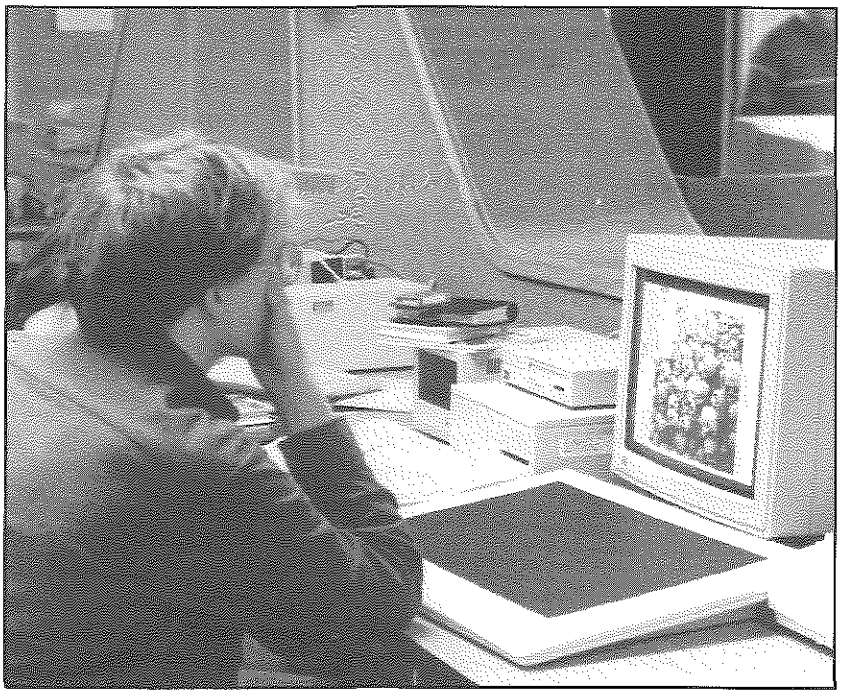
by Philip Galanter
galanter@nyu.edu

In the last issue of *Academic Computing and Networking at NYU*, the ACF's new Arts and Media Studio was described from the point of view of the hardware technology it offers and the University audience it is intended to serve. This article will focus on the software that media artists can use to fully exploit this hardware. This combination of hardware and software offers a powerful set of tools — nearly all of them already available at the Studio — that can be used both to execute traditional techniques and to open new possibilities unique to computer-based media.

The Arts and Media Studio provides a number of Macintosh and NeXT systems configured to meet the needs of students in the arts and in various forms of media production. For example, each Macintosh system includes a fast Quadra 700 processor, large amounts of disk and memory storage, and Syquest drives which allow the use of removable 45 MB hard disk cartridges. Connected to various systems around the Studio are special peripherals such as pressure-sensing drawing tablets, CD-ROM/CD-Audio drives, CD-quality audio input/output interfaces, videodisc players under computer control, and video adapters that can both display NTSC (television) video in a window on the monitor and capture video to disk for processing, editing, and digital playback.

For the purposes of this article, we will classify the software available at the Studio as being of four kinds: for still images, for moving images, for interaction, and for sound and music. In fact, there is significant overlap among various software applications, and in creating a given piece an artist will often switch among several application programs. For example, a "paint" program (see below) can be used to create individual still images (or "cels") which can then be assembled for display as a motion picture. Fortunately, the Macintosh interface enforces a great deal of commonality among programs, and allows several to be executing at the same time, so that it is almost as easy to use several Macintosh application programs as it is to use one.

It should be noted here that the ACF Arts and Media Studio is an evolving facility, and that some of the hardware and software mentioned below may not yet be in place. (For more information on this, see the sidebar *Arts and Media Studio Software Update* on page 7.)



▼ *At the Arts and Media Studio, an Adobe Photoshop workshop participant sits in front of a Macintosh Quadra 700 and studies a scanned photograph.*

Software for Still Images

"Paint" programs allow for the freehand creation of color images. Paint programs available at the Arts and Media Studio include

Claris MacPaint, PixelPaint Pro, and *Fractal Designs Painter*, each of which provides software "tools" to allow the use of the mouse or tablet and stylus as a pen, brush, or airbrush, and to create various filled areas and patterns. In addition, Painter can simulate various types of textures such as those created by charcoal or watercolors on various types of paper. The software will also interact with the artist's touch, when the pressure-sensing tablet is being used, to create strokes of varying darkness, width, airbrush density, and other attributes.

Perhaps the most powerful tool for use with still images at the Arts and Media Studio is *Adobe Photoshop* (please see the screen on page 6). Photoshop is most often used with images from other sources, whether scanned from paper, photographic prints and 35mm slides, captured from video, or imported from other programs. Photoshop can be used with various color systems such as RGB, CMYK, HSL, HSB, PANTONE (please see the sidebar *Color Systems* for definitions of these), and can export images in many formats including color separations.

The software includes numerous tools for painting, editing, creating montages, tinting, and retouching, many of which react to the pressure applied to the tablet's wireless stylus. Filters and effects can be applied to the entire image or selected areas to blur, motion blur, sharpen, color correct, solarize, create brush stroke effects, and more. Photoshop has become a popular software platform for "plug-in" modules from third party software vendors for custom effects and for direct control of scanning hardware.

For the hand creation of design- and drafting-oriented graphics, *Claris MacDraw Pro* and *Adobe Illustrator* are available. These programs allow editing and arbitrary resolution in a way that paint programs cannot. (Please see the sidebar *"What is the Difference Between a Paint Program and a Draw Program?"* on page 8.) Finally, *Quark Xpress* is available for the preparation of collections of images and text as publications. Quark is a powerful professional publishing tool used in

continued on following page

Arts and Media Services for Faculty

The Arts and Media Studio is designed primarily as a facility for student use, but a similar facility is available for faculty. The Faculty Microcomputer Lab on the third floor of Warren Weaver Hall has available the same hardware and software found in the Arts and Media Studio. Access can be reserved over the phone, or by E-mail, and faculty will find this to be a productive environment for experimentation, preparation for classes using the Arts and Media Studio, or their own creative work. In addition, equipment for high-quality slide scanning and video output and input is currently being added.

To use the Faculty Microcomputer Lab, contact Larry Mingione at 998-3043 or by E-mail (mingione@acfcluster.nyu.edu). For more information about class use of the Arts and Media Studio, contact Philip Galanter at 998-3041 or by E-mail (galanter@nyu.edu).

Color Systems

CMYK *Cyan, Magenta, Yellow, Black.* Subtractive color system typically used in four-color process printing. The colors of the visible spectrum are mixed by overlaying various densities of cyan, magenta, yellow, and black inks. The printed inks absorb certain wavelengths of the white light that hits them and reflect the color that remains.

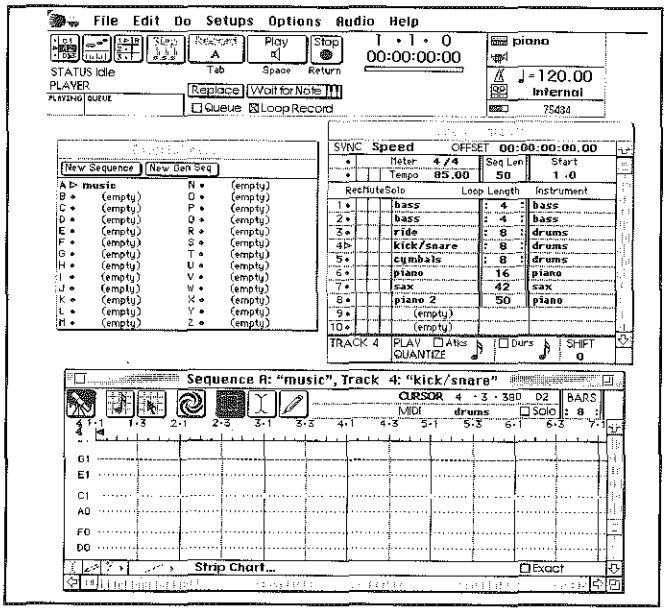
HSL *Hue, Saturation, Lightness.* Color is defined by its *hue* — which depends on the wavelengths of light that are present, *saturation* — the purity of a color, determined by the number of different wavelengths present, and *lightness* — the brightness of the light, which depends on the amplitude of the light waves.

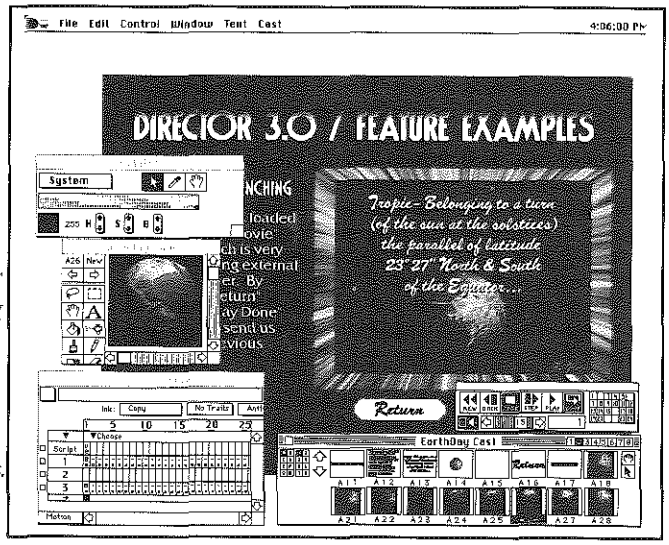
HSB *Hue, Saturation, Brightness.* Color is defined by its *hue*, *saturation* (as explained in HSL above), and *brightness* — the intensity of light reflected from or transmitted through an image.

PANTONE *Pantone Matching System (PMS).* A standard for reproduction of colors with a system of premixed inks used in printing. Printed color swatches are assigned identification numbers.

RGB *Red, Green, Blue.* Known as the additive color system. Used in video technology, various brightnesses of red, green and blue light combine to form the colors of the spectrum. On a television screen or computer monitor, the RGB color is created by light emitted from red, green and blue phosphors that coat the back of the screen and emit light when excited by an electron beam.

Three-dimensional animation is executed in a series of steps, very much like filming a movie in a world built from scratch within the computer.





▲ *Top: Adobe Photoshop is a program for manipulating images that typically have been scanned or created in other programs. The image in the upper window was hand drawn using a pressure-sensing pen; in the lower window is the same drawing with Photoshop's diffuse effect applied.*

***Bottom:** MacroMind Director 3.0 is a program for creating three-dimensional animations and interactive multimedia presentations. Director includes integrated tools for such items as script and cast management, painting and palette control.*

Arts and Media Tools, continued from preceding page.

the preparation of numerous periodicals.

Software for Moving Images

There are, in general, four ways to use the computer to prepare and present moving images. The first is two-dimensional animation, similar to traditional cel animation or cartoons, where a series of hand drawn images are shown at a rate rapid enough to create the illusion of smooth motion. The second is three-dimensional animation, where a simulated three-dimensional world within the computer is "filmed" by a "virtual camera" again creating a series of rapidly displayed frames. While these first two methods create synthetic images, the third method involves the capture of real-world events via video displayed on the computer monitor. The fourth application of computer technology to moving images results in the creation of video tapes that can then be viewed without a computer.

Two-dimensional animation. At the Arts and Media Studio, the best current tool for two-dimensional animation is *MacroMind Director* (please see the screen at left). Director is a powerful tool for creating computer multimedia, and includes the ability to import, orchestrate, and synchronize animations, sounds, graphics, and text with a number of transitions and effects. Director can also control media such as audio from CDs and video from sources like the Panasonic Laserdisc or the NEC PC-VCR. Director is something of a multimedia standard in the Macintosh world, but it is not intended to be a complete workshop for the traditional cel animator. We hope to offer something more focused on traditional two-dimensional animation in the near future.

Three-dimensional animation is executed in a series of steps which is very much like filming a movie in a world built from scratch within the computer. In the Macintosh world, each of these steps corresponds to a different program. The first step, called *modeling*, is to create three-dimensional models of the objects to be shown using an application program that is not unlike a CAD (computer-assisted design) program. For example, for a scene in a dining room, one would create individual models of the table, chairs, plates, glasses, and so on—even the floor, ceiling, and walls of the room. The second step, usually called *animation*, involves placing all of the models in the scene, determining material properties such as a wood finish for the table and chairs and a metal finish for the silverware, determining the type and positioning of the lights, and composing any choreography needed for objects that move, moving lights, or moving the camera. The third step, called *rendering*, is not interactive, but rather involves little activity on the animator's part as the computer calculates, frame-by-frame and pixel-by-pixel, what the camera sees as it "films"

Arts and Media Studio Software Update

At the time this article was written, most of the hardware and software mentioned was in place. The software listed below, except where noted, is installed in the Studio. In addition, some audio hardware was still not in place. For more up-to-date information please contact the author.

Still Image Software

PixelPaint Pro ❶
Claris MacDraw Pro
Claris MacPaint
Adobe Photoshop 2.0
Adobe Illustrator ❶
Fractal Designs Painter ❶
Quark XPress ❶

Moving Image Software

MacroMind 3D
MacroMind Director 3.0
MacroMind MediaMaker
Renderman ❷
Paracomp Swivel 3D Pro
Raster Ops MediaGrabber
Apple QuickTime
QuickPICS

Interaction Software

MacroMind Director 3.0
Voyager Videostack Toolkit
Voyager CD-Audio Toolkit
HyperCard 2.0

Sound and Music Software

AudioMedia
Digidesign Sound Designer II SK
Digidesign Deck ❷
OpCode Max
OpCode Studio Vision
OpCode Galaxy Plus
Coda Finale ❶

❶ indicates software still on order
❷ indicates software not yet Quadra-ready

the scene created in the first two steps. The rendering step is compute intensive and can require minutes or hours per frame depending on the complexity of the scene. The fourth and final step, often referred to as *post-production*, involves viewing, compositing, editing, and preparing for final presentation, either on the computer or on video tape, the sequences of rendered animation.

Three-dimensional animation sounds complex, and it is, but it can all be done on the Macintosh Quadras at the Arts and Media Studio. Modeling, the first step, can be done using an application called *Swivel 3D Pro*. Along with providing tools to construct models from scratch, Swivel can import models in various formats, and allows some basic rendering for previewing purposes. Animation, the second step, is done by importing the Swivel models into *3DWorks*, a part of the *MacroMind Three-D* product. The third step, rendering, can be done using either *RenderWorks* (also a part of MacroMind Three-D) or *MacRenderman*. Renderworks tends to be faster, but is not as flexible or extensible as MacRenderman. Finally for post-production, the *MacroMind Three-D Fireworks* application can be used to apply compositing, blurring, and blending effects, and the *SwivelMan QuickPICS* application can be used to play back completed animations.

In a future issue of *Academic Computing and Networking at NYU*, we will discuss other ACF facilities for frame-by-frame transfer of full-resolution video to videotape from both Macintosh software and more powerful systems such as Silicon Graphics workstations running Alias and Wavefront 3D animation software.

Real-world video. The third type of software for moving images enables the use of real-world video on the computer screen. The RasterOps video hardware allows video sources, such as a videodisc or tape, to be viewed in a window. The *RasterOps MediaGrabber* application can then be used to capture a sequence of video at less than full video resolution and frame-rates. Such video sequences can be used by QuickPICS for simple display, imported by MacroMind Director for use in multimedia, imported by *MediaMaker* for integration onto a computer generated tape, or converted into a *QuickTime* movie. QuickTime is a technology recently released by Apple as a standard for moving images and synchronized soundtracks. We expect to be adding QuickTime software to the Arts and Media Studio in the near future, and in future issues of *Academic Computing and Networking at NYU* we will discuss QuickTime and other ACF facilities for frame-by-frame full resolution transfer of video into the Macintosh.

Video postproduction. The fourth type of software for moving images enables multimedia users of the Macintosh to "print to video" in the same sense that a user of a word processor prints to a laser printer.

Using *MacroMind MediaMaker* one can assemble elements from videodisc, Macintosh and CD audio, images from paint and draw programs, and two-dimensional and three-dimensional animations; record, edit and preview them on the computer screen; and then record the results to

continued on following page

Arts and Media Tools, continued from preceding page.

The computer is increasingly being viewed as a medium in its own right.

a VHS or S-VHS tape using the NEC PC-VCR.

Software for Sound and Music

In commercial music and sound production, there are a number of options for computer based tools, but most would agree that the Macintosh is the leading desktop computer used at the high-end. First, Macintosh Quadras can use built-in hardware or higher quality add-in boards to record and play back digital audio on the hard disk. Digital audio can be used to add audio to interactive multimedia, to facilitate soundtrack production for animations, or to record and mix music. Second, the Macintosh can be used to control electronic instruments, such as synthesizers and samplers, as well as effects and other hardware using a protocol called MIDI. Third, software can be used to prepare musical scores for printing.

At the Arts and Media Studio, there is the option of using speech-quality or CD-quality audio. The Macintosh Quadra can record limited-fidelity speech and sounds with a HyperCard utility. On the systems configured for interactive multimedia, the *AudioMedia* hardware and software enable the hard disk recording and playback of stereo digital audio of CD quality. AudioMedia recordings can be used to add sound to multimedia applications, to produce soundtracks to accompany computer animations, or to record and mix music. The AudioMedia software features real-time digital equalization, time compression and expansion without pitch shifting, non-destructive playlist editing, sound file editing using cut and paste tools, mixing multiple tracks, and conversion of sound files into formats used by other applications.

An even more powerful software tool for use with the AudioMedia software is an application called *Digidesign Deck.* Deck emulates a four track mixer/recorder/effects unit, and features sound-on-sound recording, automated faders and effects such as echo and chorus, and unlimited track bouncing. Unfortunately, at the time this article was written Deck was not yet Quadra-compatible. (Please see *Arts and Media Studio Software Update.)*

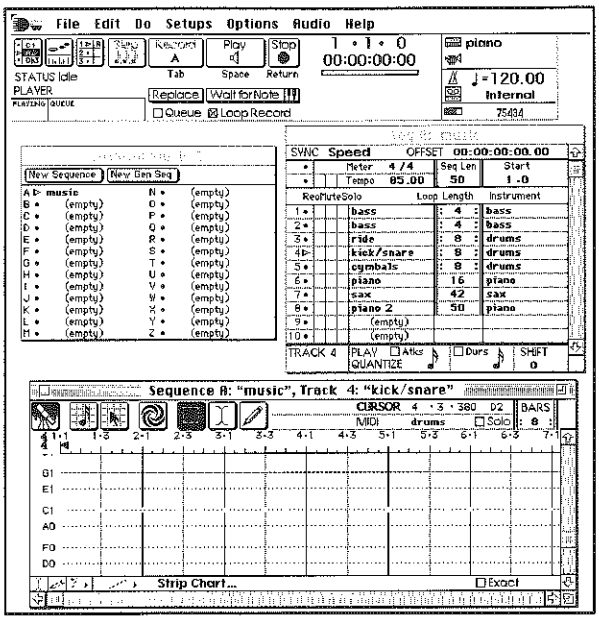
For MIDI music production the programs *Studio Vision* (please see the screen on page 9), *Galaxy Plus,* and *Sound Designer II SK* are available. Studio Vision is a sequencer program which allows a musician to record performances, edit the performance, add multiple tracks, and orchestrate a complex piece of music. MIDI recording captures performance information, such as the name of a note, when its corresponding key was depressed and with what velocity, when the key was released, and so on. Along with MIDI data recording, Studio Vision cooperates with the AudioMedia hardware, providing two digital audio tracks for recorded acoustic instruments or voice to be synchronized with MIDI instruments. Galaxy Plus uses MIDI to upload and download timbre information used by synthesizers, allowing sounds to be stored and edited on the Macintosh. Sound Designer II SK serves a similar

What is the Difference Between a Paint Program and a Draw Program?

Still images on computers are of two basic kinds: pixel-based and object-based. Paint programs are those that can create and manipulate pixel-based images, and draw programs are those that can create and manipulate object-based images. Programs that are intended to manipulate existing pixel-based images more than create them are sometimes called image processing programs.

Pixel-based images are very much like what is viewed on the computer monitor, a rectangular array of dots each having its own color. Each dot is called a picture element or pixel. The internal representation of this image is simply a set of numbers which describe the color of each pixel of the image. Object-based images are displayed in the same way, but differ in their internal representation. Internally an object-based image is a list of basic shapes, such as lines, arcs, or circles, each with a size, placement, and color. These internal shapes, or objects, are then rendered as pixels for display.

The advantage of object-based images is that the viewed image can be edited by moving, resizing, or coloring the underlying objects. A circle enclosing a logo, for example, can be thickened or resized accurately with a simple menu selection. Object-based images can also be rendered on various PostScript devices at an arbitrary resolution. Pixel-based images, on the other hand, can never have better resolution than the underlying pixel information will allow, just as the grain in film limits its resolution and the practical degree to which it can be enlarged. Pixel based images, however, can be generated from the real world by using various scanning devices, can be processed to add various effects such as blending, softening, or sharpening, and can be created with various painterly brush and stroke effects.



▲ *OpCode Studio Vision is a program for creating, editing and playing back MIDI. Note that the lowest window shows the score in piano roll notation.*

editing function when used with samplers, and in addition allows sounds captured with AudioMedia to be downloaded into samplers.

OpCode Max is a MIDI oriented visual programming language which can be used to define and implement MIDI tools or processes that go beyond what is available in commercial off-the-shelf packages. Max programs are created by connecting boxes which represent a basic operation (get a note, send a note, transpose a note, create a random number, etc.) in a chart which represents the data flow. Parameters can be set using interactive control objects such as knobs, buttons, sliders, and so on. Max, and other MIDI programs, can be connected so that, for example, notes played on a keyboard are first modified in real-time by a Max program and then recorded by StudioVision.

The third type of software for sound and music at the Arts and Media Studio is represented by *OpCode Galaxy Plus,* a sophisticated "note processor" used for musical score preparation. Notes can be entered using either a computer or music keyboard, and performance information from sequencers such as Studio Vision can be imported. *Finale,* by Coda, includes features required to prepare professional quality scores which can be printed on laser printers or exported to typesetting machines.

Software for Interaction

While the computer can be used as a creative tool when applied to traditional media, it is increasingly being viewed as a medium in its own right. Not only can the computer be used to directly present still and moving images and sound, it can be done in such a way that the viewer interacts with the presentation. Such interactions can be at a coarse level, with the computer being used as a sort of media jukebox, or they can be at a fine level, allowing the viewer to navigate through a complex media space on a moment-to-moment basis, in a manner more akin to a video game.

In the Macintosh world, creators of interactive multimedia typically draw elements from one or more of the applications noted above into another application which acts as a container and a tool for designing the user interface and guiding interactions. For example, images scanned and manipulated with Photoshop, two-dimensional Director animations, three-dimensional RenderMan animations, and digitized video, sound and music can all be presented from a single interactive interface.

At the Arts and Media Studio, *HyperCard* and Director are used to control interactive multimedia, although it is worth noting that Max has some multimedia control features, as well. The scripting capabilities for HyperCard and Director are similar, and both include the ability to add extensions to control external media devices such as videodiscs, CD-Audio, MIDI sound generators, consumer videotape machines, and the like. HyperCard has the advantage of being simple to use, is included with every Macintosh, and is not terribly demanding on system resources. Because Director also includes, along with its interactive capabilities, the numerous animation and presentation tools noted above, it is both more powerful and complicated than HyperCard.

Those interested in controlling videodiscs and CD-Audio with a minimum of effort should consider using HyperCard and the *Voyager VideoStack Toolkit* and *CD-AudioStack Toolkit.* The VideoStack includes a stack called *EventMaker* that allows one to interactively view a videodisc, define and catalog clips, and automatically create buttons to play the corresponding clips. The AudioStack offers similar features to easily create buttons that use standard audio CDs as sources of random access sound and music. ■

Foreign Languages and Computers

Unicode, A Multilingual Character Code; WordPerfect 5.1 Hebrew Module

International Word Processing Special Interest Group

The International Word Processing special interest group (SIG) of the NYPC User Group meets on the third Thursday of each month at Warren Weaver Hall in a room provided by the ACF. Members of the SIG discuss word processing programs that can use non-English characters, translation programs, non-English fonts, and related topics. For more information on the SIG, its meetings or the NYPC, contact ACF consultant Bob Litt at 998-3500 or by E-mail at the address given below. The NYPC has over 65 SIGs which meet every month to discuss various computer-related topics. For more information on upcoming events, call the NYPC hotline at 533-NYPC.

Robert Litt
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For the past several years, engineers from Apple, Xerox, IBM, Claris, Metaphor, Microsoft, NeXT, Sun, Research Libraries Group, and others have been attempting to create a 16-bit multilingual character code that efficiently represents the world's normal text characters for use by computers. Called Unicode, the project goal has been to develop a single uniform text and character standard that can encompass all languages and form a long-lasting basis for world-wide information systems.

In 1991, Unicode Version 1.0 was released. It contains approximately 25,000 characters of all the world's major scripts, including some 18,000 unique Han ideographic characters defined by industry standards in China, Japan, Korea and Taiwan. These characters are sufficient for modern communication, including such classical languages as Greek, Hebrew, Latin. Pali, Sanskrit, and literary Chinese. Future versions of Unicode are expected to include such obsolete scripts as cuneiform, runes, and hieroglyphs. Additional Han characters are also expected to be added.

Unicode uses the unambiguous, fixed-width characters of ASCII, the text standard, as a model. Fixed-width characters simplify information processing, making text processors easier to implement.

Members of the Unicode Consortium, which sponsors the project, are active in the American National Standards Institute (ANSI) X3L2 multi-byte character encoding committee, the US national body working with the International Standards Organization (ISO), to refine international multi-byte character encoding.

For more information on Unicode, contact Richard McGowan at NeXT Computer, Inc., 900 Chesapeake Drive, Redwood City, CA 94063. Phone: 415-780-4522; Fax: 415-780-3714.

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WordPerfect 5.1 Hebrew Module: A First Look

As we go to press, WordPerfect Corporation is expected to begin shipping a Hebrew Module that will turn WordPerfect 5.1 into a Hebrew and English word processor. On February 12, WordPerfect demonstrated this new module to the New York Personal Computer Users Group at NYU at a special meeting sponsored by the Academic Computing Facility.

The Hebrew version is a module that works with WordPerfect 5.1 and it requires that you already have WordPerfect installed on your PC. The Hebrew module maintains the current functions of WordPerfect while adding scalable Hebrew fonts for printing to a laser printer and for typing text from right to left. It also allows you to toggle between typing in English and in Hebrew.

The Hebrew module retails for $149 (it is unknown whether there are educational discounts). For copy protection, the module comes with a "hardware key" that must be attached to the PC's printer parallel port in order for the module to run.

The Hebrew module adds a typing direction indicator to the extreme right of the **Status** line: a right angle bracket shows that you are typing in English (left to right), while a left angle bracket shows you are typing in Hebrew (right to left)

The **Reveal Codes** function shows both English and Hebrew text and still uses the standard WordPerfect codes. I particularly liked the fact that the **Right-Align** command moves the cursor to the extreme left of the line in the Hebrew version, while in English mode it aligns against the right margin.

The usual WordPerfect column formatting can be used, and you can even have one column with Hebrew text and English text in the other. What's more, you can now mix graphics figures with either Hebrew or English text, and in both cases the text wraps around the figure perfectly.

I was disappointed somewhat that there is no Spell-Checker or Thesaurus for the Hebrew module. Perhaps this will be forthcoming sometime in the future, but some people at the demonstration thought that it would be particularly difficult to implement this in Hebrew.

For those with a need to incorporate Hebrew or Yiddish text in their documents, this product is sure to be a winner.

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Hardware and Software Update

Spring '92 at the ACF's Microcomputer Labs: New PCs, Macintoshes, Software

by Estelle Hochberg
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The Spring '92 semester opened at the ACF with a reorganization and expansion of two of the ACF's computer labs (previewed in the January 1992 issue of this newsletter). The ACF's 14 Washington Place site is now a PC lab offering a mix of IBM PS/2s (Models 55SX and 70) and powerful Gateway 2000 computers. The Gateway computers use fast '486 microprocessors running at 33 MHz.

The Education Building site is now a Macintosh lab containing Macintosh IIsi computers as well as the more powerful, memory-enhanced IIci's. In addition, a new Arts and Media Studio, which opened in January, houses Quadras (Apple's powerful, top-of-the-line Macintosh), several NeXT computers, laserdiscs, CD-ROMs, and other graphics, animation, and audio peripherals.

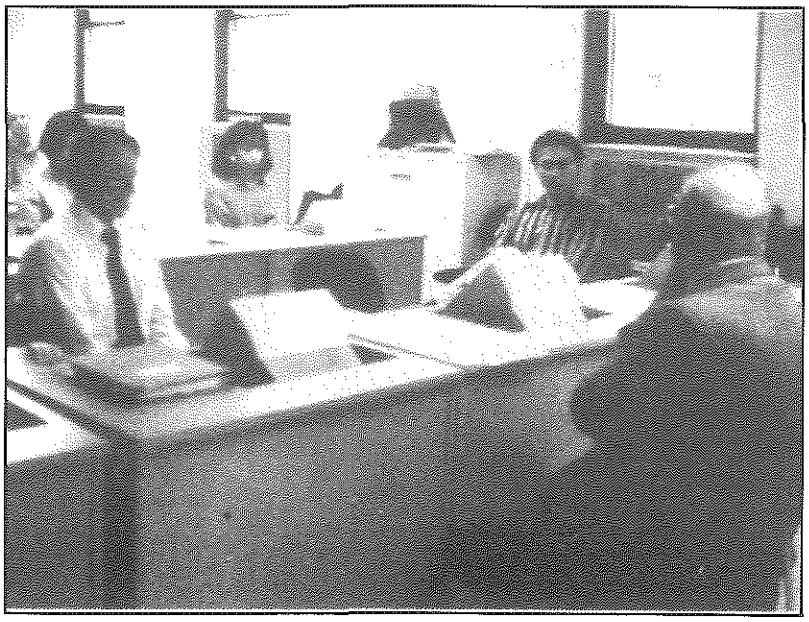
For more on the Studio, please see the *Arts and Media* section of this newsletter. Please see the sidebar on page 13 for a list of hardware at the four ACF computer labs.

New Software at the Labs

New versions of several software packages are now available to users of the ACF computer labs. Macintosh users now have Microsoft *Word Version 5.0, WordPerfect 2.03,* and *Mathematica 2.0. MacDraw Pro* has also been upgraded recently. In addition, *PageMaker* has been made generally available to Macintosh users at the labs, and both Macintosh and PC versions of *SYSTAT* have been installed. SYSTAT is a new interactive statistical package featured in the January 1992 issue of this newsletter.

New PC software also includes *ATLAS*GIS*, the mapping and geographic information system software (see *Social Science Computing* in this issue of the newsletter) and *the Windows 3.0* versions of three popular packages (see below).

continued on page 13



▼ *At the PC classroom in the ACF's Education Building lab.*

Classrooms and office space for instructor-student conferences

Two computer classrooms at the ACF's Education Building lab — one with Macintoshes and another with PCs — may be reserved by faculty for occasional class sessions (contact ACF consultant Howard Fink at 998-3399). And instructors whose classes are using the ACF labs for their courses may reserve office space to meet with individual students to discuss their work; computer-equipped office space for instructor-student consultation hours is available at both the Education Building (contact Howard Fink) and the 14 Washington Place lab (contact ACF consultant Jac Fried at 998-3436). ■

Protecting Your Macintosh or PC From Viruses

Regular backups can help protect you from data loss due to a virus attack.

You may have seen reports of the Michelangelo PC Virus and the Macintosh MBDFA virus in the news recently. While these viruses have not infected computers at the ACF microcomputer labs, there has been some concern about them from people in the NYU community. Viruses can cause serious damage to hard disks and result in data loss. Therefore, the ACF would like to take this opportunity to remind you that we have anti-virus software available for both PC and Macintosh computers. The ACF recommends that you use an anti-viral package on your personal computer to detect and eradicate viruses already on your system and to help prevent future infection. (Please see the box on facing page for information on how to obtain these programs.)

Michelangelo Virus

The Michelangelo PC virus usually activates on March 6, the birthday of Michelangelo Buonarroti, but it has been known to activate on other dates, depending sometimes on the data setting of the computer's internal clock and sometimes, perhaps, on changes in the virus itself. It is a fairly destructive virus, and PC users may wish to make sure that they are protected from its effects.

Generally, this virus spreads only by floppy disk, and the infected diskette must be in the A drive when the computer is booted. This virus reformats the hard disk, wiping out all programs and files, and writes over the disk so that data recovery is virtually impossible. The virus does not spread on network file servers that are not DOS-based.

To be safe, it is necessary to either scan all incoming floppy disks that you obtain, or to continuously run an anti-virus software package on your PC. We recommend that you use either a commercial anti-viral package or the shareware *F-PROT* package available from the ACF. An infected hard disk on a computer using DOS 5 can apparently be fixed with the command **fdisk /mbr** run from an uninfected DOS boot disk.

Macintosh MBDFA Virus

The new Macintosh virus, known as the MBDFA virus, was originally embedded in three computer games — Ten Tile Puzzle, Obnoxious Tetris, and Tetricycle — and was distributed widely through software archives on the Internet. It spreads on all Macintosh systems except MacPluses, but it still can be present on MacPlus systems. The virus causes some abnormal behavior, including system crashes and malfunctions in some programs. The shareware programs Disinfectant and Gatekeeper, available from the ACF, were updated to handle this virus.

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and Karen Strauss
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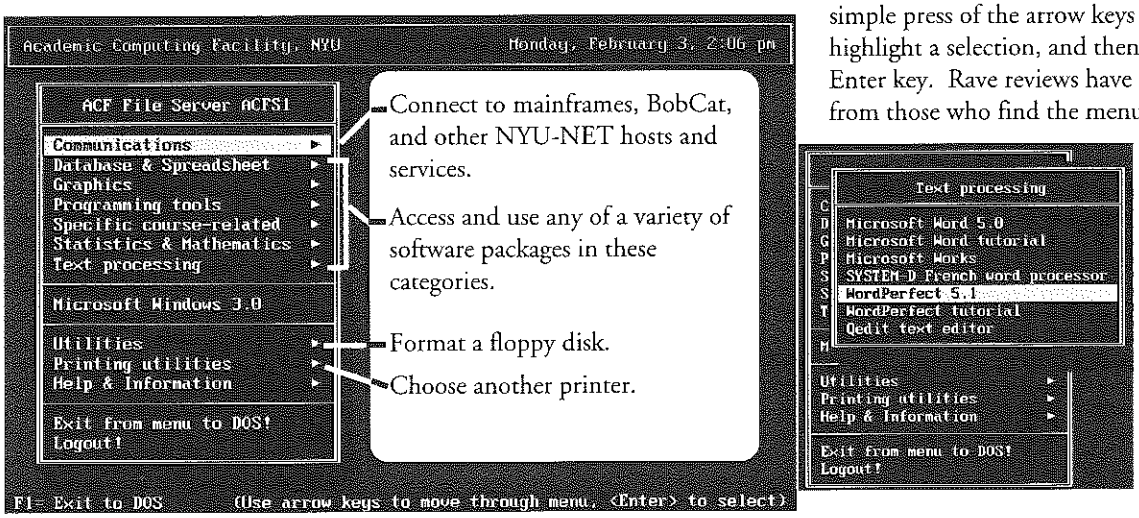
A new menu system aids PC users at ACF labs

Confused by DOS? Lost your notes on the command that starts up the spreadsheet or wordprocessor you wish to use? A new menu system at the ACF labs now provides a simple interface for users of the IBM PS/2's and IBM-type computers. The new, locally prepared system makes it easy to find one's way to a PC application of choice and start it up — be it a spreadsheet, wordprocessor, statistics package, database manager or programming language. It also helps lab users in such tasks as formatting floppy disks, selecting an alternate printer, and connecting to an NYU mainframe or to BobCat. With the new menu system, most of this can now be accomplished with a simple press of the arrow keys or mouse to highlight a selection, and then another press of the Enter key. Rave reviews have also been heard from those who find the menu system a convenient way to browse among the 60-or-so application packages now available to PC users at the labs. For dyed-in-the-wool DOS lovers, a quick escape to the DOS prompt is offered at each menu.



Obtaining new anti-viral software from the ACF for your Macintosh or PC

Here are several methods for obtaining the latest versions of the anti-virus programs mentioned in the accompanying article (see facing page).

For MS-DOS: F-PROT (FP202D.ZIP)

For the Macintosh: Disinfectant (DISINFECTANT26.SITHQX);
Gatekeeper (GATEKEEPER124.SITHQX)

1. Bring a diskette to the ACF Faculty Microcomputer Lab, Room 312 Warren Weaver Hall, between the hours of 12 noon and 8 pm. Appointments are easily obtained by calling 998-3044.

2. Connect to the NYU/ACF INFO system via modem (or other serial communications link) and select the **DOWNLOADS** menu. For IBM-type PCs, select the **MSDOS** section, and use the **KERMIT** protocol to download the file mentioned above. For Macintosh computers, select the **MAC** section and use the **KERMIT** protocol to download the files mentioned above.

3. Connect to the ACF VAX/VMS cluster via FTP (anonymous ftp to ACF*), cd to the MSDOS directory, set **binary** mode, and download the file mentioned above. For Macintosh programs, cd to the MAC directory and download the files mentioned above.

At the ACF's Instructional Micro Labs, Spring '92

NYU students, faculty, and staff may use ACF microcomputers at no charge to the individual as *general users* or under two types of accounts: *individual ("research") accounts*, and *class accounts*.

Obtaining an ACF account. To use the lab as a *general user*, simply bring your current, valid NYU ID to any of the labs listed below; no account application procedure is required. *Individual* and *class* accounts (also called *priority access accounts*) are obtained through the ACF's Accounts Office (Room 305 Warren Weaver Hall, 998-3035). They are issued for specific academic purposes and allow priority access to ACF computers. For priority access accounts, a special form must be filled out and, for students requesting an *individual account*, an instructor's signature is required. Please contact the Accounts Office for details.

What's available at the labs in Spring '92. The following microcomputer equipment is available at the ACF's instructional computer labs. All systems are connected to local networks linked to the campus-wide network, NYU-NET, and are connected locally to Novell-based file servers and laser printers. Each site has two or more laser printers. A large collection of software (over 85 packages) is available. For hours of operation, please see inside back cover; for usage restrictions, if any, please see notes below.

Third Avenue North Residence hall, basement (62 computers):†
- 32 IBM and IBM-type computers with mouse and VGA color monitor
- 30 Apple Macintosh SE computers, with two floppy drives

Education Building, second floor (82 computers):††
The following does not include Arts and Media Studio equipment—see page 6 for details.
- 38 Macintosh IIsi computers with hard disks and color monitors
- 20 Macintosh IIci computers with hard disks, color monitors, and 16 MB memory
- 24 IBM PS/2 computers, model 55SX, with mouse, VGA color monitor

Tisch Hall, Room LC-8 (50 computers):†
- 12 IBM PS/2 computers, model 55SX, with mouse, VGA color monitor
- 15 IBM PS/2 computers, model 30, with monochrome monitor
- 23 Macintosh Plus computers with hard disks

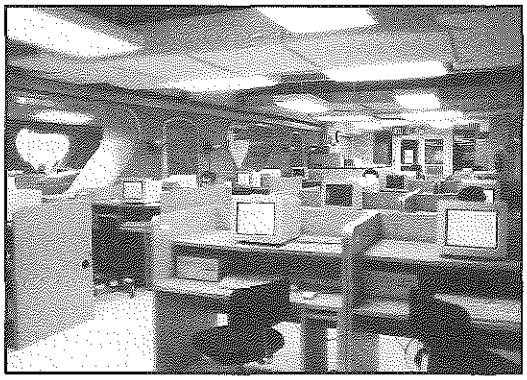
14 Washington Place (54 computers):††
- 9 Gateway 2000 computers with 486 processors and 8 MB of memory and Super-VGA monitors
- 19 IBM PS/2 computers, model 55SX, with mouse, VGA color monitor
- 26 IBM PS/2 computers, model 70, with mouse, VGA color monitor; 25 with numeric coprocessor and joystick

†Currently available to general users and to instructional/research users (students and faculty with individual and class accounts) during all hours of operation (see inside back cover).

††Available to general users from 8:30 a.m. to 1 p.m., Mon.- Fri., and to instructional/research users (students and faculty with individual and class accounts) during all hours of operation (see inside back cover).

ACF Micro Lab Update, continued from page 11.

In all, there are now some 60 software packages on the PC servers at the ACF's computer labs; Macintosh users at the labs have a choice of 25 packages, not including the software that has been specially obtained for users of the new Arts and Media Studio.



▲ *The new Macintosh lab at the ACF's Education Building site.*

New Software for Windows 3.0

The latest *Windows* versions of three major packages — *Word*, *Excel*, and *WordPerfect* — are being installed on the PC servers at the ACF's computer labs as we go to press. In early January, the PC equipment at three of the labs was upgraded. As a result, it is now possible to run Microsoft Windows on any of the IBM-type PC's at the 14 Washington Place and Education Building labs, and on about ten of the machines in the Tisch Hall lab. ■

Using WordPerfect 5.1 Temporary Macros as Handy Text Repeaters

by Henry Mullish
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Typing documents that contain repeated mention of technical terms which are both long and difficult to spell can be made easier with WordPerfect's temporary macro capabilities.

Temporary macros are erased from memory as soon as you exit WordPerfect, so that they do not take up room on disk or confuse you with macro definitions that you may never use again. The only thing a temporary macro can do is to insert text that you have previously typed. It is nothing fancy but it can be of great help.

Using the macro commands key (**Ctrl-PgUp**), you can create up to ten different temporary macros and assign them to the **Alt** key combined with a number **0** through **9**. Use the number keys above the character keys, not the numeric keypad. This can be done in two different ways, one a little more flexible than the other, and we shall describe both of them.

Method 1. For example, suppose you want to assign your name to be typed out each time you press **Alt–0**. Press **Ctrl-PgUp** and you'll see the prompt **Variable:**

To assign the macro to number **0**, type **0** followed by the **Enter** key. Then you will see the prompt **Value:**

Type the text that you want to assign to the temporary macro called **Alt-0** that you are creating. You can type up to 79 characters. The definition process ends when you press the **Enter** key. To create additional macros, up to a total of ten, repeat the procedure using numbers 1 through 9.

To use the macro, simply press **Alt-0** and a copy of the text will automatically appear on the screen. Of course, you may repeat this process as often as you like.

Method 2. The second method of creating a temporary macro allows you to assign text you have already typed. There are three advantages to this second method. First, you may type the text and make any corrections without worrying about the macro recorder. Secondly, you can record text that consists of several lines without worrying about the **Enter** key terminating the macro definition. The third advantage is that instead of being limited to 79 characters as you are with the first method, using already typed text permits you a maximum of 128 characters.

Here's how the second method works. Type the text and make any corrections that are necessary. Block the text in the usual way, by pressing either **Alt-F4** or **F12**, and then press **Ctrl-PgUp**. You will then see the prompt **Variable:**

Assign a number from **0** to **9** to the variable and then press the **Enter** key. Then, every time you press the **Alt** key followed by the number you assigned to the macro, it will automatically type out the text for you. ■

From the Law School: Hints for WordPerfect Users

Mail Merge and Current Date Function

WordPerfect 5.1 changes the format in which mail merge codes appear in documents from the format used in version 4.2. Merge codes are now more clearly marked. Cryptic codes such as **^E** and **^R** used to signal **end of record** and **end of field** in version 4.2 are now **{END FIELD}** for the end of a field and **{END RECORD}** for the end of a record. The commands for inserting these codes remain the same (**F9** for **end field** and **Shift F9** for **end record**), but the change in the way these codes are displayed should make writing secondary mail merge data files more straightforward.

To convert files that were created in WordPerfect 4.2 to the 5.1 format, simply hit **Crtl** and **F9**, then hit **3** or **C** for **Convert Old Merge Codes**. The codes will be instantly converted. While a primary file created in 5.1 will work with a secondary file that was created in 4.2, it is much easier to work with 5.1 secondary files and it takes only a short time to convert the codes.

Current Date Function

Another helpful feature of WordPerfect, although it is not new to 5.1, is the **current date** function. If you want to always have the latest date in your documents when you edit or print them, you should use the current date function. To use the current date function, hit **Shift** and **F5**, then **2** or **C**. This will insert the date at the cursor position in your document; the code will be visible in reveal codes. When you retrieve the document at a later date, the date code is updated to reflect the current date.

Donald Chestnut
Donald Chesnut is the manager of the MicroSupport Services Department of the School of Law.

Using the Internet

FTP: Accessing Software Archives and Other Files Via the Internet

By Karen Strauss
strauss@acfcluster.nyu.edu

This article was written with assistance from Jeffrey Bary, Gary Chapman, Estelle Hochberg, Gary Rosenblum, and Stephen Tihor.

The Internet is an interconnection of over 5,000 networks in over 36 countries, serving more than 600,000 host computers used by more than 4,000,000 people[1]. The Internet has evolved in the past 19 years to become an international community of educational and research institutions, businesses and government organizations.

The Internet makes it possible to send E-mail to people using computers around the world, share database and other information services, participate in ongoing electronic conferences covering every topic imaginable (see page 16 for more on electronic conferences), and retrieve all manner of files and documents — from Supreme Court opinions, NASA photos and digital books to free software for Macintosh and PC computer.

For an overview of Internet services, stop by the ACF Documentation Office (room 306 in Warren Weaver Hall) to browse through the *NYSERNet Guide to Internet Services*, the *Internet Resources Guide to Electronic Serials and Conferences,* and *Zen and the Art of the Internet.*

This is the first in a series of occasional articles that will introduce you to the Internet and its services. The purpose of this series is to explain some of the services available and then provide you with step-by-step instructions for accessing them.

From time to time in the newsletter, we highlight collections of information available over the Internet via "Anonymous FTP." In the January newsletter, for example, an article on the Gutenberg Project explained how to FTP copyright-free books via the Internet. This article will make it easier for you to retrieve such files.

File Transfer Protocol, better known as FTP, is one of the most widely used Internet services, second only to electronic mail. FTP is a method used for transferring information or files between two computers, often connected via the Internet. A person sitting at a computer at one location can retrieve files from, or send files to, another computer — in the next room or on the other side of the world. FTP allows you to access vast amounts of software archives, documents, archived network conferences, files, digital books, graphics and so on, that are stored on different types of computers.

FTP is one of a number of communications protocols collectively referred to as TCP/IP, which serves as the basis for communication over the Internet. TCP stands for *Transmission Control Protocol,* IP for *Internet Protocol.*

This article will introduce you to the basics of FTP and will provide you with sample FTP sessions from UNIX, VMS, Macintosh and IBM-type PCs. It will talk about some of the considerations in retrieving files from remote locations and will provide information on some of the more popular sites for acquiring software and other items. We have also provided a glossary to help you understand some of the more technical or esoteric terms used in this article.

Anonymous FTP

Many computers offer an Anonymous FTP service. This means that you do not need to have an account on that computer in order to retrieve selected files from it. Anonymous FTP allows people without accounts to access certain disks and directories by connecting using an FTP client and applying the username *Anonymous.*

Why is this noteworthy? Well, many of

continued on page 18

[1] *Statistical and historical information about the Internet was taken from the Internet Society Announcement, updated January 21, 1992 and available for Anonymous FTP from NNSC.NSF.NET.*

Electronic Conferences: Linking Scholars Via International Networks

British and Irish literature, Chinese poems, Green movements, humanities, the United Nations, and more are discussed over international links.

Electronic conferences like the BITNET discussion "lists" allow scholars at universities around the world to exchange information and views quickly and conveniently via international networks and electronic mail (E-mail).

Previous issues of this newsletter have featured discussion lists focusing on Shakespeare, Jane Austen, science and technology, linguistics, ancient texts, academic software, multimedia and more. In this issue, we present a few newly created lists that we thought might be of interest. The accompanying box tells you how to subscribe to these lists using E-mail. Users of ACF mainframes and minicomputers automatically have access to E-mail. Other members of the NYU community can obtain ACF Electronic Mail Accounts, which are available to all faculty, staff and students with valid NYU ID's (see page 17 for details).

Modern British and Irish literature (1895-1955). MODBRITS is the international computer discussion group for scholars, teachers, and students of Modern British and Irish literature (1895-1955) and those who share their interests. MODBRITS offers a medium for announcements and bulletins, notes and queries, conference papers, articles, theses and other scholarly papers, as well as spontaneous and informal discussions. Computerized (electronic) texts, concordances, sample journals, publishers' catalogues, and bibliographical resources may also become available. E-mail inquiries about the discussion group should be sent directly to MODBRITS@KENTVM.KENT.EDU

Chinese poems. An electronic mailing list devoted to sharing and discussing Chinese poems. Poems are sent to the list in a coded format that contains all of the information necessary to view the poems in their Chinese characters. Decoding instructions and information on utilities to view the poems are sent to new subscribers. GuoBiao is the preferred coding scheme for CHPOEM-L, but files using other codes are welcome. Subscription address: LISTSERV@UBVM.CC.BUFFALO.EDU
List name: CHPOEM-L

Green movements. This list is dedicated to the study of Green movements worldwide and their influence on public opinion and public policy. The scope of the list's discussion is global: all Green movements, at every level, are of interest to this list. It is emphasized that the purpose of this list is the study of Green movements and it is not a tool for organizing or promoting those movements. Subscription address: INDYCMS.IUPUI.EDU
List name: GREEN

Community college educators. *Catalyst*, a refereed print journal that has been serving community college educators for more than twenty years, will be distrib-

Subscribing to Discussion Lists from NYU

Users of the ACF's UNIX, VAX/VMS and VM/CMS computers — and holders of the ACF's Electronic Mail Accounts — can subscribe to these discussion lists by sending an E-mail message containing only the command

SUBSCRIBE list_name your_name

replacing "list_name" with the appropriate list name (e.g., acsoft-l) and "your_name" with your first and last name — for example,

subscribe acsoft-l mary smith

Send the message to the "subscription address" listed in the article. If you are using an Electronic Mail Account or a regular account on the ACF cluster of VAX/VMS computers, use the address format shown below under "VMS." Address formats for UNIX and CMS.are also shown.

	VMS	UNIX	CMS
Internet	in%"username@node"	username@node	username at node
e.g.,	in%"listserv@vm.usc.edu"	listserv@vm.usc.edu	listserv at vm.usc.edu
BITNET	bitnet%"username@node"	username@node.bitnet	username at node
e.g.,	bitnet%"listserv@wumvd"	listserv@wumvd.bitnet	listserv at wumvd

uted as an electronic journal in addition to its print version. Subscriptions to the electronic version of the journal are now available free of charge via BITNET and the Internet. Initiated in 1971, *Catalyst* is the second oldest continuously published journal in the community college field. It publishes practitioner-oriented articles on practices in continuing/community education as delivered by community colleges, including papers on research in the field. Subscription address: LISTSERV@VTVM1.CC.VT.EDU
List name: CATALYST

Humanities for postgraduates. HUMGRAD is a new UK-based electronic mailing list for postgraduates working in the humanities. It's a forum for the exchange of ideas, information and comments on any humanities subject and the work and problems of postgraduates. A place for general humanities discussion, HUMGRAD subscribers also discuss potentials of computers in humanities research. Subscription address:
MAILBASE@NEWCASTLE.AC.UK
List name: HUMGRAD

Screen writing. SCRNWRIT subscribers discuss the joys and challenges of screen writing for film and TV. Any topic of interest to writers or potential writers is appropriate (e.g., format, story ideas, dialogue, characters, agents, producers, directors, actors, studios, problems and/or solutions). Subscription address: LISTSERV@TAMVM1 (note this is a BITNET address) List name: SCRNWRIT

United Nations. A list dedicated to discussion of the United Nations. The list is open to all interested persons. Subscription address: LISTSERV@INDYCMS.IUPUI.EDU
List name: UN

Southeast Asian studies. This list is designed to facilitate communication among researchers, scholars, students, teachers, and other people interested in Southeast Asian studies of current events. For the purposes of this list, Southeast Asia is loosely defined as Burma/Myanmar across to Hong Kong and down through Australia and New Zealand. Subscription address: LISTSERV@MSU.EDU
List name: SEASIA-L ■

Obtaining an E-Mail Account...

The ACF's Electronic Mail Accounts are available free of charge to NYU faculty, staff, and students. Electronic mail (E-mail) is also available automatically to individuals with accounts on ACF mainframes and minicomputers.

NYU students, faculty and staff members may apply for E-mail Accounts at any of the ACF microcomputer labs (see inside back cover for locations and hours). You will need to complete a very brief application form and to show your current, valid, NYU I.D.

Faculty and staff members, if they prefer, may also request E-mail Accounts by letter. Please use departmental letterhead showing the department's address and phone number, and include your name, title, campus address and campus phone number.

Please send your request to the Academic Computing Facility Accounts Office, Room 305, Warren Weaver Hall. For additional information on ACF computer accounts, please contact the ACF Accounts Office, at 998-3035.

Dartmouth Dante Database Update...

The Dartmouth Dante Project makes available the full text of more than 600 years of commentary on Dante Alighieri's major poem, La Divina Commedia, in a database easily accessible via the Internet .

In the March/May 1991 newsletter, we provided a detailed look at the database project. Since that article was published, the Dartmouth Dante Project has moved the database to a new computer, where users will no longer need to sign up for an individual account to use the database. Instead, they simply connect to the Dartmouth library computer. Other changes to the database include increased line search speed and access to the Dartmouth Online Catalog and other database services, including materials on alcoholism and substance abuse, the MEDLINE database of medical journals, and access to the National Weather Service forecasts.

The Dante database is available daily, except Fridays from midnight to 3:00 am Eastern time. To connect to the Dartmouth College Library Online System via the Internet:

telnet library.dartmouth.edu

You will automatically be placed in the online catalog.

You will now see the online catalog program start up. Typing **connect** and tapping **return** will give you a list of services available. To use the Dante database, type connect dante and tap return. You will be connected to the latest version of this database. Next you will be prompted to identify your terminal type. Enter VT100 and tap return. There are a number of introductory screens; press return until you see

Enter search or option letter (eg Line Search, Help, Option list, Quit):
1_:

Then you may begin searching.

A new version of the users manual is available for $4.00 from the address below. For further information, contact: Dartmouth Dante Project, 1 Reed Hall, HB 6087, Dartmouth College, Hanover, NH 03755, Phone: (603)646-2633, E-mail: dante@dartmouth.edu.

Extracted from a Darmouth College release submitted by Larry Mingione.

Internet guide for the novice user available from the ACF.

Zen and the Art of the Internet: A Beginner's Guide to the Internet by Brendan P.Kehoe is available from the ACF Documentation Office (Room 306 Warren Weaver Hall, 998-3036). A fee of approximately three cents per page will be charged to offset copying costs.

FTP, continued from page 15.

the systems contain free or inexpensive programs that you can retrieve and use on your own computer, whether it is a PC, Macintosh, Amiga, UNIX, NeXT, VMS, or other type of computer. Unlike most software purchased at computer stores, many of these programs are in the public domain and are free to be used or copied and given to someone else. Also available via FTP are programs referred to as *shareware*. Shareware programs have a copyright that allows people to try the program for free for a number of days and then requires that a specified payment be made if the program will be continued to be used. (The ACF *strongly* encourages payment of shareware fees.) With shareware programs, you are free to distribute the software to other people without charge, who are then also subject to shareware restrictions.

Other material available via FTP includes network software, Internet documents and other documentation, Supreme Court opinions, full text reports from the U.S. General Accounting Office, photographs from the space shuttle, weather photos and statistics, song lyrics, and discographies of classical and popular artists.

FTPing Software: Some Caveats

While many of the public domain and shareware programs are quite good, some even better than commercial applications, others are not very good. Determining whether a program is worth the effort of retrieving it can be difficult. One way to check out programs is to read the newsgroups that relate to specific computer types.

Excellent utility programs, communications programs, and games usually make up the bulk of good shareware. If you are looking for spreadsheets, word processing, database management or other "big" applications, generally you will not find them as shareware. In key areas, commercial applications provide a level of functionality that shareware does not match.

Viruses are a major area of concern when acquiring software. Viruses can do serious damage to your computer and can even render it inoperative. Therefore, when you acquire programs from any source, it is essential that you check them for viruses before running them on your computer. Virus detecting and cleaning programs for PC and Macintosh computers are available from the ACF (see box in the *Microcomputers* section of this newsletter for more information).

While the chances of acquiring a virus-ridden program from one of the archives mentioned in this article are somewhat slim, we nevertheless strongly recommend that you acquire anti-virus software and check each application that you retrieve before using it. The software in the archives mentioned here have been checked by the archive managers, although new viruses can slide through. (See the *Microcomputers* section of this newsletter for information about viruses.)

When retrieving files, you should be especially careful of any directory named "Uploads." These directories contain files that have not yet been screened for viruses or checked for other problems. Therefore, it is better to wait until

GLOSSARY

ASCII
A simple text file containing such characters as might be used on a typewriter; end of lines are marked with "special" characters called "carraige return" and "line feed".

Binary file
A data file or program comtaining arbitrary binary data; typically cannot be printed on a screen without some special software.

FTP
File Transfer Protocol. The Internet protocol used to transfer files between computers.

Hostname
A name for a computer connected to the Internet.

Internet
An international interconnectionof networks connecting over 600,000 computers.

Public Domain
Copyright-free or distributed without charge.

Shareware
Applications that are copyrighted but that allow unlimited distribution and come with a free trial period. If the application will continue to be used after that period, payment usually nominal must be made.

TCP/IP
Transmission Control Protocol/Internet Protocol. Protocols that serve as the basis of communication over the Internet.

Virus
A self-replicating program that can absorb system resources and cause serious damage to a computer or computers. Programs exist to help protect systems from viruses. See the box on page 13 for more information.

the files are moved into the main archive directories before acquiring them.

Basic FTP Skills

The techniques for FTPing differ based on which type of computer you are using, its operating system and its connection to the Internet. The overall approach to FTPing remains fairly constant regardless of which machine you are using.

Generally, to FTP to a site, you have to know its *hostname*. This is how you let the network know which remote site to connect to. Hostnames are unique identifiers for a particular remote computer.

In general, to FTP, you type

FTP address

where "address" is the hostname of the computer that you wish to connect to. After a short interval, you will be asked for the username, for example

login:

You may see the prompt **user:** or **username:** instead. Here you enter **Anonymous** and press return.You will be prompted for a password; for example

password:

Most sites require you to use your E-mail address (*user@acfcluster.nyu.edu* or something to that effect) as the password; a few sites will allow you to use the password *guest*. If you should use your E-mail address as the password, you will be informed by the host computer at the time of login. Once you have completed the login procedure, you will get a prompt — either **FTP>** or the name of the host computer (such as HOST.COMPUTER.EDU>); now you have access to directories and files at that site.

Once you have completed the login procedure, you will be able to issue commands. Typing **help** will give you very brief help on FTP commands. Most of the machines that you will access will be UNIX-based or VMS-based. The operating system that is being run by the host machine determines which commands you can use. For example, with a UNIX machine, you will have to carefully note the capitalization of filenames and directory names, since UNIX is case sensitive. With VMS, this is not important.

Commands

Once you have com-

continued on page 20

A Sampling of Sites That Support Anonymous FTP

Contents of Archive	Hostname
Macintosh, MS-DOS, VMS, UNIX shareware and documentation	wuarchive.wustl.edu wsmr-simtel20.army.mil
MS-DOS shareware	msdos.archive.umich.edu
Windows 3.0 software and fonts	cica.cica.indiana.edu
Macintosh shareware	sumex-aim.stanford.edu mac.archive.umich.edu
Supreme Court Rulings	ftp.cwru.edu
NASA Archives	ames.arc.nasa.gov
Song lyrics and discographies of musicians	vacs.uwp.edu
General Accounting Office Reports Archive	cu.nih.gov
Network Information	nic.ddn.mil nnsc.nsf.net

An FTP session to WUARCHIVE.WUSTL.EDU from the ACFcluster

(To save space, directory listings in this sample session were truncated.)

```
$ ftp wuarchive.wustl.edu
ACF1.NYU.EDU MultiNet FTP user process 3.0(102)
Connection opened (Assuming 8-bit connections)
<wuarchive.wustl.edu FTP server(Version 6.14 Fri Jan 17 12:57:07 CST 1992) ready.
Username: anonymous
Password: E-mail@acfcluster.nyu.edu                [Password will not show on screen.]
<This is an experimental FTP server. If your FTP client crashes or
<hangs shortly after login please try using a dash(-)as the first
<character of your password. This will turn off the informational
<messages that may be confusing your FTP client.
<This system may be used 24 hours a day, 7 days a week. The local
< time is Fri Jan 31 16:17:17 1992.
<Please read the file README
< it was last modified on Wed Nov 20 15:04:55 1991 - 72 days ago
<Please read the file README.NFS
< it was last modified on Tue Dec 10 09:59:58 1991 - 52 days ago
<Guest login ok, access restrictions apply.
WUARCHIVE.WUSTL.EDU> get README
<Opening ASCII mode data connection for README (2317 bytes).
<Transfer complete.
WUARCHIVE.WUSTL.EDU> dir
<Opening ASCII mode data connection for /bin/ls.
total 18409
-rw-r—r— 1 root    archive     2317 Nov 20 15:04 README
-rw-r—r— 1 root    archive     2050 Dec 10 09:59 README.NFS
-rw-r—r— 1 root    wheel    6167030 Jan 30 08:52 ls-lR
drwxr-xr-x 12 root archive      512 Jan 17 14:35 mirrors
<Transfer complete.
WUARCHIVE.WUSTL.EDU> cd mirrors
<Welcome to the 'mirrors' directory. All of the files in this
<directory are copied from other systems in order to make them
<more accessible to users (such as yourself).
<CWD command successful.
WUARCHIVE.WUSTL.EDU> dir
<Opening ASCII mode data connection for /bin/ls.
total 23
drwxr-xr-x 27 root archive      512 Aug 26 07:59 macintosh
drwxr-xr-x176 root archive      3072 Jan 29 09:34 msdos
<Transfer complete.
WUARCHIVE.WUSTL.EDU> cd macintosh
<CWD command successful.
WUARCHIVE.WUSTL.EDU> dir
Opening ASCII mode data connection for /bin/ls.
total 4759
-rw-r—r— 1 root    archive    16154 Sep  2  1990 00readme.txt
<Transfer complete.
WUARCHIVE.WUSTL.EDU> binary
Type: Image, Structure: File, Mode: Stream
WUARCHIVE.WUSTL.EDU> get idle.sit
To local file: idle.sit
<Opening ASCII mode data connection for file list.
<Transfer complete.
<Opening BINARY mode data connection for idle.sit (1280 bytes).
<Transfer complete.
WUARCHIVE.WUSTL.EDU> exit
<Goodbye.
$
```

Common Archive File Extensions Encountered in FTP Sessions

This chart lists some of the more common file extensions that you will encounter when you are using FTP and lists the program that you will need inorder to use these files on your computer. If you wish to retrieve a file with one of these extensions, it is necessary to set the transfer type to either ASCII or Binary, based on the listing in the chart (A is for ASCII, B for Binary). For more information on retrieving files, please see the accompanying article. (†) *As we go to press, it is unclear whether UnZip runs under System 7 on all Macintosh models. ACF staff members are investigating this question.*

File Ext.	Type A	Type B	Operating System / Unpackaging Program: Macintosh	MS-DOS	UNIX	VMS	Notes
ARC	✖	✔	ArcMac1.3c	ARC 6.02	ARC521	ARCVMS.UUE	For MS-DOS; compresses one or more files into one smaller file
CPT	✖	✔	Compactor				Denotes Macintosh file.
HQX	✔	✖	BINHEX4.BIN				Denotes Macintosh file; binary data that has been converted to ASCII data for means for file transfer.
SIT	✖	✔	Stuffit Classic stuffitinstaller stuffit151.hqx	unsit.zip	unsit		One of the most popular methods for archiving Macintosh files.
TAR	✖	✔	UnTar2.0	tarread.arc	tar	vmstar	UNIX program for archiving.
UUE	✔	✖	uutool2.0.3	toaduu20.zip	uudecode	uudecode2.vms	UNIX program that converts binary data to ASCII data for easier file transfer.
Z	✖	✔	MacCompress3.2	comp430d.zip	uncompress unpack	lzcomp.exe	UNIX compression utility.
ZIP	✖	✔	UnZip.1 0 (†)	pkz110.exe	unzip41	unzip41	Popular format for MS-DOS file storage.
ZOO	✖	✔	MacBooz2.1	zoo210.exe	zoo210	zoo210.tar-z	Compression format used mainly for PC files.

FTP Command Summary

To find out more about these commands, type **help command_name** at the FTP prompt.

Command	Function
!	Temporary exit. Type "exit" to return.
ascii	Mode for transferring text files. FTP default.
binary	Mode for transferring binary files.
cd, cwd, cdup	Changes default directory on remote computer; accompanied by the name of the directory to change to. Issued by itself will result in a prompt for the directory name. CDUP move you to the parent directory on the remote computer.
dir	Issued by itself, lists the contents of the default directory on the remote computer.Can be issued with directory names, filenames and wildcards.
exit, quit	Exits the FTP program.
get, receive	Used to transfer a file from the remote comptuer to the local computer.
hash	Shows file transfer progress with hash (#) marks.
help	Online help for the FTP program.**Help command_name** will give you information on that command.For a list of command, type a "?."
lcd	Change local directory.
login, user	Provides remote computer with user name and password information. Generally you will be asked for this information automatically when you connect to a remote computer.
ls, ls -l	Directory listing; see dir above.
mget/mput	Used to retrieve/transfer multiple files from the remote computer. The files are specified using wildcards. Anonymous FTP sites generally will not allow you to mput files.
prompt	Toggle on/off prompt for mget/mput.
put, send	Transfer files from local computer to remote computer.
pwd	Shows the current directory (the default directory) on the remote computer.
spawn	Spawn a command interpretter on the local computer.
status	Shows the status of the FTP server on the remote computer.
user	See login.
verbose	Toggles the complete printing of all replies from the foreign host FTP server.

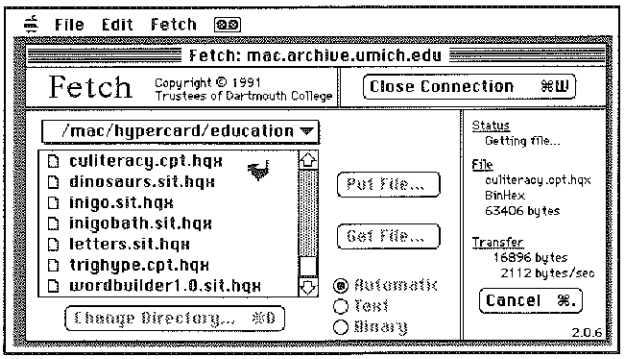
FTP, continued from page 19.

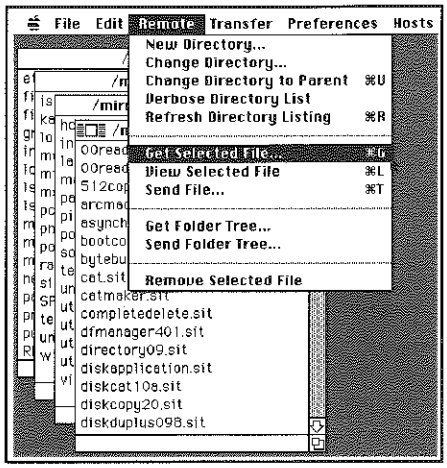
pleted the login procedure, you are ready to give commands to the host computer. This is a fairly simple process and many of the commands will be familiar to you if you are a VMS, UNIX or PC user. Macintosh users do not normally issue commands at a prompt, so they will not be familiar with the general syntax.

Typing **dir** will give you a listing of files showing date created, size and name.(The command **ls** will give you a similar listing on most host computers.) When you issue a directory command after your login, you usually get a list of directories available for anonymous access as well as a list of files in the root FTP directory. If there is a file or files called **README**, then you will want to retrieve these files first and read them for further information about the site and its files.

Other files you should look for upon initial login are files with the name **INDEX** or **ls-lR**. These files contain important information about the nature and location of files in that archive.

Most often, you are looking for a direc-





▲ *Top, a screen from Fetch, a Macintosh program used for FTPing files. Xferit, below, is another Macintosh FTP program. These programs are available from the ACF.*

tory called **pub**. This is where many sites store files for public access. Here, additional README files frequently provide information about the pub directory structure at that site and often contain important clues about the location of specific files.

To change to another directory, you will issue a **cd** or **cwd** command, as follows:

cd directoryname

This will place you into the directory specified by **directoryname**. It is then necessary to issue another **dir** or **ls** command to see the names of the files in that directory.

To disconnect from a host, type **quit** and press return. This will put you back at the the prompt on your home machine.

Text or Binary?

Retrieving files is a bit more complicated. Determining whether a file is stored on a host computer in *text* (ASCII) or *binary* format is of paramount importance to would-be FTPers. This is important because binary files retrieved with the transfer protocol set to text will be corrupted and will not run. Text files retrieved with a binary setting may lose valuable and necessary formatting information.

Determining the file type is easier than you might think. The fastest and easiest way to tell whether a file is text or binary is to look at its extension. A file extension refers to the characters that follow the last period in a file's name. Certain file extensions, such as TXT, make it easy to determine the file type; a TXT extension clearly denotes a text file. But other extensions do not appear to be as easy to decipher. You will rarely see an extension BIN, which might serve as a clue that the file is binary. But once you learn the code, determining file types are easy. For a list of common file extensions and their meanings, please see the chart at left.

Retrieving Files

Now that you have determined whether a file is in text or binary format, you need to let the computers know which format to use to transfer the file. When you start an FTP session, the file type is automatically set to ASCII. Therefore, if you are retrieving text files, you do not need to set the transfer type. If you are retrieving binary files, however, you need to type the command

binary

This will set the transfer type to binary and usually give you back a message like

Type: Image, Structure: File, Mode: Stream

Now you are ready to get your files. And "get" them you will, because that is the command that you issue to retrieve files. In general, to retrieve a file, you issue the command

get filename

where filename is the name of the file that you wish to retrieve. With UNIX, the file retrieval will start immediately. With VMS you will be prompted with

To local file:

VMS prompts you to give the file a name that it will use on your local computer. If you choose to use the file's current name, press return. If you wish to rename the file, type in the new name and then press return. Once you have typed in this information, the retrieval will begin.

When file retrieval begins, you will get a message on screen telling you that a data connection is being opened for that file. It will also tell you the number of bytes in the file. If you are using VMS, holding down the control key and pressing A will show you how far the transfer has progressed. When transfer is completed, you will receive a message telling you so.

If you are finished retrieving files, type **quit** to disconnect from the host computer and get back to your local machine.

Now that you know the general steps behind FTP, please see the sample sessions for UNIX and VMS on pages 19 and 22. Macintosh and MS-

continued on page 22

FTP, continued from page 21.

DOS users please see the section *FTPing Directly Via NYU-NET*, below, for information on Macintosh and MS-DOS programs for FTPing. For additional FTP commands, please see the command summary on page 20.

Other Considerations

You will notice that when you FTP a file from a remote computer, it takes only a few minutes for that computer to transfer the file to you, even if the file is many kilobytes in size. The reason that a file transfers that quickly is that the interconnection between the remote computer and your local computer is designed for high speed file transfers. When you are working from your home Macintosh or PC via modem and communications software such as *Kermit*, on the other hand, the final transfer to your microcomputer can take a very long time(some files can take more than half an hour to download).

Since the time spent downloading a file will tie up your telephone and other resources, it is recommended that, if you are retrieving large files for your home computer, you do the transfer from your mainframe account to floppy disk in one of the ACF micro labs. The transfer time from mainframe to floppy disk via the Ethernet connections in the labs will be quite short, hundreds of times faster than via modem.

FTPing Directly Via NYU-NET

If you have a Macintosh or PC computer in your NYU office which is connected to NYU-NET via Ethernet or Appletalk, it is possible to FTP a file directly to your hard disk, bypassing the intermediate step of using a mainframe account. (Microcomputers connected to NYU-NET via NIU or ADU connections cannot do a direct FTP, but need to use the method described in the previous sections.) An advantage to FTPing directly from your microcomputer is that file retrieval is more direct; a disadvantage is that there is a possibility that network response may be slower and that the connection to the remote site may time out and disconnect you.

Macintosh and PC computers in the ACF's public microcomputer facilites cannot presently FTP to a computer off campus. At these sites, the only way you can retrieve files from an off-campus computer is if you have a mainframe account.

From a Macintosh, *Xferit* or *Fetch* can be used to FTP files. Xferit and Fetch are available for use at the ACF micro labs. Personal copies can be obtained from the ACF Faculty Microcomputer Lab, call 998-3043. From a PC, the **FTP** command is used to FTP file.

Using FTP on the Internet, you will have access to hundred of thousands of files and applications relating to almost any subject imaginable. In future issues of the newsletter, we will talk about other services available on the Internet. In the meantime, we hope that you will use this article to help you explore the electronic frontier. ■

Sample UNIX FTP Session to SUMEX-AIM.STANFORD.EDU

(To save space, directory listings in this sample session were truncated.)

```
acf3> ftp sumex-aim.stanford.edu
Connected to sumex-aim.stanford.edu.
220 SUMEX-AIM FTP server (Version 4.196 Mon Jan 13 13:52:23 PST 1992) ready.
Name (sumex-aim.stanford.edu:strauss): anonymous
331 Guest login ok, send mail address (user@host) as password.
Password:E-mail@acf3.nyu.edu
[Password will not show on screen.]
230 Guest connection accepted. Restrictions apply.
ftp> ls -l
200 PORT command successful.
150 Opening ASCII mode data connection for /bin/ls.
total 9
-r---r---r--  1 0     1    1181 Nov  8 11:06 _POSTING
drwxr-xr-x 25 1016   31   512 Feb 28 02:16 info-mac
drwxr-x---  2 0     31    1024 Feb 28 09:36 pid
drwxrwsr-x 12 0     20    1024 Jan  9 11:20 pub
226 Transfer complete.
495 bytes received in 0.08 seconds (6 Kbytes/s)
ftp> cd info-mac
250 CWD command successful.
ftp> ls -l
200 PORT command successful.
150 Opening ASCII mode data connection for /bin/ls.
total 312
-rw-r---r---  1 1016   31   1171 Dec 13 11:04 00readme.txt
drwxr-xr-x  2 1016   31   4096 Feb 26 14:26 app
rwxr-xr-x  2 1016   31   512 Feb 26 14:26 virus
226 Transfer complete.
1519 bytes received in 0.28 seconds (5.3 Kbytes/s)
ftp> get 00readme.txt
200 PORT command successful.
150 Opening BINARY mode data connection for 00readme.txt (1171 bytes).
226 Transfer complete.
local: 00readme.txt remote: 00readme.txt
1171 bytes received in 0.1 seconds (11 Kbytes/s)
ftp> ls
200 PORT command successful.
150 Opening ASCII mode data connection for /bin/ls.
00util-abstracts.abs
auto-doubler-105i-updater.hqx
auto-lock-12.hqx
bat-filer.hqx
binhex-40.hqx
binhex-vm-cms-files.txt
binhex4.bin
vm-on-removable-hd.hqx
226 Transfer complete.
4012 bytes received in 2.4 seconds (1.6 Kbytes/s)
ftp> binary
200 Type set to I.
ftp> get binhex4.bin
200 PORT command successful.
150 Opening BINARY mode data connection for binhex4.bin (7168 bytes).
226 Transfer complete.
local: binhex4.bin remote: binhex4.bin
7168 bytes received in 0.71 seconds (9.9 Kbytes/s)
ftp> bye
221 Goodbye.
acf3>
```

Interactive Program Teaches Research and Library Skills

Macintosh-Based Online Research Assistant Available at Bobst Library

by Rhonda Zangwill

Rhonda Zangwill is the Public Affairs Manager for Bobst Library.

Research Assistant, an interactive *HyperCard*-based library instruction program, is now available in Bobst's Microcomputer Center. Research Assistant uses easy-to-follow steps to guide students through the research process and is ideal for those needing help on term papers.

The program provides assistance in selecting a topic, finding background information, focusing research, writing a thesis statement, organizing arguments and, finally, presenting the paper in standard format. This program is custom designed for use in Bobst Library and offers instruction in the use of many specific resources including specialized encyclopedias, bibliographies, catalogs, subject headings and periodical indexes.

The program is particularly useful for the library novice, and the Bobst staff are encouraging undergraduates enrolled in basic writing and study skills classes, as well as students in re-entry programs, to use it. Since Research Assistant is extremely user-friendly, it will appeal to everyone, regardless of their level of computer literacy.

Research Assistant, which was developed by Ann Bevilacqua, formerly the Instructional Services Librarian at Bobst Library, is available for use at Bobst free of charge to the University community. Users simply request access to Research Assistant from staff in the Microcomputer Center and they will be given login instructions. A one-page quick reference guide and a comprehensive user manual are also available in the Center.

Faculty who would like to incorporate Research Assistant into their classes should contact Amy Underhill at 998-2526. ■

Dialog Classmate Program Continues

Additional sessions for the Dialog Classmate Program at Bobst are scheduled for March and April. This program provides access to 112 databases in many subjects, including literature, health sciences, politics, economics and history. Some databases provide citations, some give abstracts, and some are full text. To participate in the program, one must first attend a basic workshop in online searching techniques. Upon completion of the workshop, participants are given a free password good for one hour of searching. Additional one-hour passwords are available at a modest cost. No reservations are necessary. For more information contact Lise Dyckman at 998-2513 or check with the staff at any Bobst reference center.

Basic Workshops

Bobst Microcomputer Center, Level B

Tuesday, March 17 10am - noon
Wednesday, March 25 6 pm - 8 pm

Refresher Sessions

Bobst Avery Fisher Center, East Room, 2nd floor

Wednesday, March 18 6 pm - 7 pm
Thursday, April 9 6 pm - 7 pm

Bobst Microcomputer Center Gets Kodak Color Printer

Eastman Kodak recently donated a professional-quality color printer to the University for use in Bobst Library's Microcomputer Center. Valued at $30,000, this state-of-the-art technology offers users photographic quality printing capabilities from virtually any graphics file, including TIFF, Encapsulated PostScript (EPS) and PICT. Prints are available in either black-and-white or color and come in two sizes, 8 1/2 x 11 inches and 11 x 11 inches. The cost is $10 for a print and $12 for a transparency.

The Kodak printer offers such high quality color images because it utilizes a "dye-sublimation" process which can be likened to a person mixing paint to achieve an exact shade. This differs significantly from the traditional "dithering"

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Service Center for Macintosh Computers Opens in the Book Centers

by Kathy Bear

Kathy Bear recently joined the NYU community as Manager of the Computer Department of the NYU Book Centers (below). She comes to NYU from Vassar College in Poughkeepsie, N.Y. where she managed the Vassar Computer Store for six years. Ms. Bear looks forward to meeting faculty, staff and students at NYU and to working with them to make their computing experience enjoyable and productive.

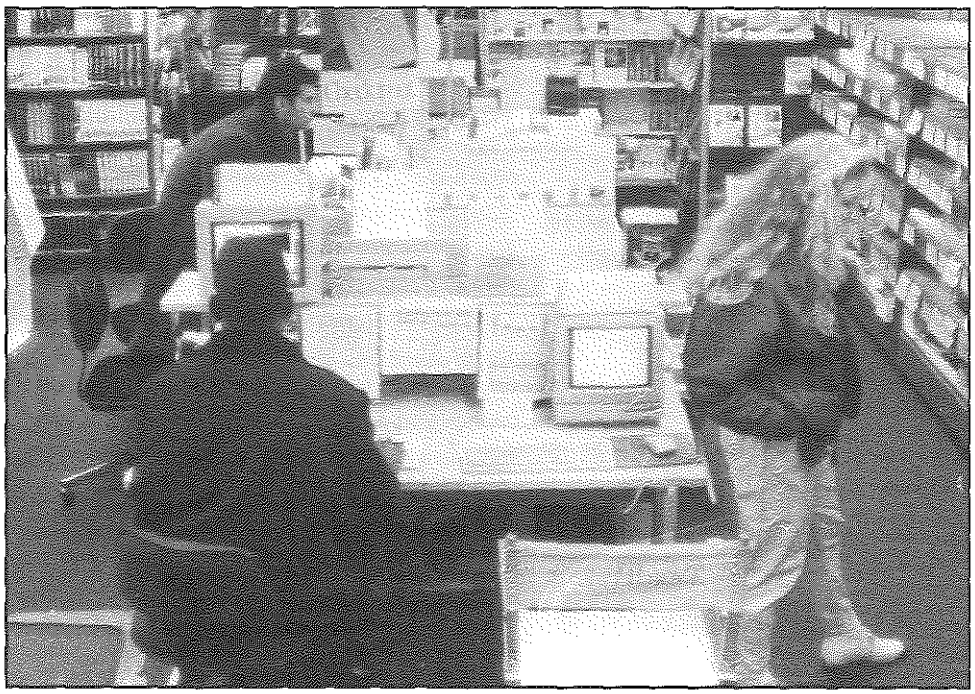
The Computer Department of the Book Centers has recently become a service center for Apple Macintosh equipment, adding a new facet to the support we offer the Macintosh owners of NYU.

We are able to perform warranty and non-warranty repairs on Macintosh equipment. Apple hardware comes with a one year warranty, which the Computer Department will be able to honor. We will also perform out-of-warranty repairs for a parts and labor fee. If you are having a problem with your Macintosh equipment, please stop by and talk to us. It may be a software problem or a virus, but if it is a hardware failure, we will be prepared to repair it.

The opening of a service facility allows the Computer Department to perform upgrades on Macintosh equipment. If you are using Apple's System 7.0 and are finding yourself running out of memory, an upgrade may be the solution. New operating systems and more complex software packages require more memory. We stock a variety of memory SIMMs for the Macintosh and will be glad to consult with you on your upgrade needs. Also, if you are interested in upgrading to another Macintosh (for example, moving from a Mac Classic to a Mac Classic II) we are able to perform these services as well.

The Computer Department is now able to purchase many of the small repair parts for the Macintosh. If your Mac Plus needs a new battery or you lose your keyboard cable, we will be able to obtain those parts for you.

The Book Centers are also offering AppleCare service contracts to the NYU community. An AppleCare contract covers, during the life of the contract, parts and labor on any repair necessitated by normal use. This service contract is registered with Apple, so if you are traveling with your Macintosh and have a problem, under the terms of your contract, you will be able to take your machine to any authorized Apple dealer for repair.



The addition of the service component to the services already offered by the Computer Department of the Book Centers, makes it truly a full service organization. You can be assured that when you purchase your equipment through the Computer Department, we will be there to help you with any problems that might arise in its use.

News and Notes from the Purchasing Services Department

by Stephen Krause
krause@acfcluster.nyu.edu

Stephen Krause is Senior Buyer, NYU Purchasing Services Dvision.

Please note: *The prices and maintenance arrangements mentioned in this section are for NYU institutional purchases only. For prices on individual purchases, you are encouraged to consult with the NYU Book Center.*

I would like to thank all of the people who responded by letter and by phone to the NYU laser toner recycling program. In the first couple of months of the program, I received a number of complaints about leaking toner cartridges, smudges and streaks on the copies, below normal number of pages per cartridge, and overall poor performance.

PM Company, the current supplier of the remanufactured cartridges, was informed of these problems. As a result they have improved their quality control and replaced all of the old cartridges at Central Supply with new serialized cartridges. PM Area Representative Gary Amorosa has visited each site that has experienced problems and will continue to be on campus to address any problems concerning their use.

PM is also requesting that any cartridges that do not have a seven digit serial number stamped on the box and cartridge be returned to Central Supply for an immediate replacement. All toner cartridges, whether remanufactured or new, have some inherent percentage of failure. It is, however, the responsibility of PM to keep that percentage at an acceptable level.

Remanufactured Laser Toner Bill Of Rights

These are your rights under the agreement with PM. If you require additional information, please contact Central Supply at 998-1200. When toner cartridges are ordered from Central Supply, remanufactured cartridges will be issued unless otherwise specified.

- When ordering a remanufactured laser toner cartridge from Central Supply, you can expect a toner cartridge which is free from defects. The cartridge should produce an equal or greater number of copies as an original manufactured cartridge (approximately 4-5000 pages).
- The remanufactured cartridges carry a limited warranty. Any cartridge deemed unusable due to shipping damage, manufacturing defects including leaks and cracks, or malfunctions while in the laser printer, will be replaced at no cost at Central Supply.
- PM shall reimburse NYU of all expenses relating to damage caused by the use of a PM remanufactured cartridge in any NYU-owned laser printer. Contact Gary Amorosa at (800)544-7626 to report any problem. If PM can not respond to a service call by the following day, contact one of the maintenance companies (CMI, Computerland, or Key Systems) used by NYU to service the machines (see the January newsletter for further information). For reimbursement, PM requests a written statement on the service company's letterhead and a copy of the service report.
- Hewlett-Packard does not recommend the use of refilled toner cartridges in their LaserJet printers. Using a non-HP cartridge in a LaserJet does not affect the warranty unless the damage to the printer was caused by the remanufactured cartridge. If the the cartridge is the cause, HP will service the machine and bill standard time and materials charges.

Please send any comments to Stephen Krause, NYU Purchasing Services Division, 269 Mercer St. fifth floor.

Demonstrations

The Everex Tempo Carrier 386IS/20 MHZ Notebook Computer will be available at the Purchasing Services Division for hands-on demonstrations. The Tempo Carrier weighs only 5.3 pounds and is the lightest of the Tempo Notebooks. The model being demonstrated has a letter size footprint and 4MB of RAM, an 80MB hard disk, a 1.44MB 3.5" internal floppy drive, an A/C adapter/Quick charger, a backlit VGA display with high-contrast LCD and 32 gray levels at 640-by-480 resolution, a full travel keyboard, a KeyMouse pointer on the keyboard, and an Everex mouse and carrying case. DOS 5.0 and Windows 3.0 are also included with the system. NYU's price for this package is $2,546.

Everex offers other configurations as well as other products at a discount to NYU. To obtain pricing information on Everex products, or arrange for a demonstration of the Everex Notebook, please contact the Purchasing Services Division at 998-1030.

Several NYU suppliers have suggested that they can provide demonstrations on some of their product lines. If there are enough interested parties, a product demonstration can be arranged. If your department is interested in having a piece of computer hardware or software demonstrated, please contact the Purchasing Department.

continued on following page

Recycling Used NYU Computer Equipment

If your department has computer hardware or software that it no longer uses or if an upgrade is planned and you would like to find a new home for the old equipment, please let the Purchasing Department know and we will try to put you in touch with departments or persons interested in its acquisition. This arrangement applies to department acquisitions only.

The value of each product is normally decided upon by the interested parties. The Purchasing Department puts those who wish to barter in touch with each other. If the equipment is tagged by the Property Management office, arrangements must be made by the departments involved in the transaction to inform Property Management in writing that the equipment has been relocated.

For a listing of used hardware and software available, please contact Stephen Krause at 998-1032 or via E-mail(krause@acfcluster.nyu.edu).

continued from preceding page

New Agreements

Computerland Corporation is now an IBM Certified Educational Specialist (CES) for NYU. Computerland will provide on-site installation work and training free to NYU on all IBM state contract computer and software purchases. These purchases include all IBM PS/2 Systems, IBM Academic Solution Offering (IBM PS/2 models bundled with various software), boards, and peripherals.

Services provided by Computerland include installation of IBM products and operating systems, checking product configurations; testing units; diagnosing equipment problems and arranging for servicing or replacement; training in machine operation and set-up, keyboard use, system features and functions, diskette handling procedures, and program execution; exploring IBM warranty provisions and post-warranty services.

This program only applies to IBM hardware purchased direct from IBM or from Computerland. Contact Computerland at (212)269-6600 or (212)213-6446 for more information.

New Offerings

Gateway 2000 is offering free application software from Borland and Microsoft with the purchase of any 386 or 486 computer system. NYU customers may receive one free software option per system purchased. Options include *Microsoft Excel, Word for Windows, Powerpoint, Project 3.0 for Windows, Windows Programmer Pak, Borland Paradox 3.5 with either Borland C++ or Turbo Pascal for Windows.* For additional information on the options available, please contact Bob Burnison at Gateway, (800)248-2042, Ext. 5537. Whenever contacting Gateway for information, service or technical support, identify yourself as a corporate account and reference NYU's customer account *#NewYorkU.*

Dell Computer Corporation and Digital Equipment Corporation have aggressively slashed their prices on their IBM-compatible PCs. For current pricing information, call Dell Educational Representative Anne Herndon at (800)274-7799 Ext.8596 and DEC Educational Account Executive Jack Schweber at (212)856-3189. ■

Kodak Printer, continued from page 23

process available in laser or ink-jet color printers that uses closely spaced individual dots of different colors to produce a seemingly solid field of color. The new printer has virtually unlimited applications, from scanning a treasured yet deteriorating family photograph and reprinting it anew, to printing scanned images that have been electronically manipulated, to producing extremely high quality prints of original computer art or professional documents.

All printing on the Kodak printer is done by staff in the Microcomputer Center. Graphics files can be dropped off in the Center during regular hours, or arrangements can be made for an electronic transfer over the Internet. Users must contact Center Manager Scott Yates to discuss the specifics of any Kodak printing request in advance. His number is 998-2460.

To introduce the University community to this and other sophisticated desktop publishing technologies, the Center will offer "Photoshop Fridays" beginning this month. Every Friday, from 9 am until 6:30 pm, users will have access to the color Macintosh computers and image manipulation software such as Adobe Photoshop. To assist those who are not experienced in the use of these tools, the Center will offer for sale a comprehensive 250-page user manual. The manual costs $30.00 and also includes one free print from the Kodak XL7700 printer. ■

Data Sets Recently Acquired by the ACF's Data Base Archive

by Bert Holland
holland@acfcluster.nyu.edu

The following are some of the data sets that have been acquired by the ACF's Data Base Archive since the report in the January 1992 issue of this newsletter. (The ICPSR numbers, included below for your convenience, are reference numbers assigned by the Inter-University Consortium for Political and Social Research, the organization from which these files were obtained.)

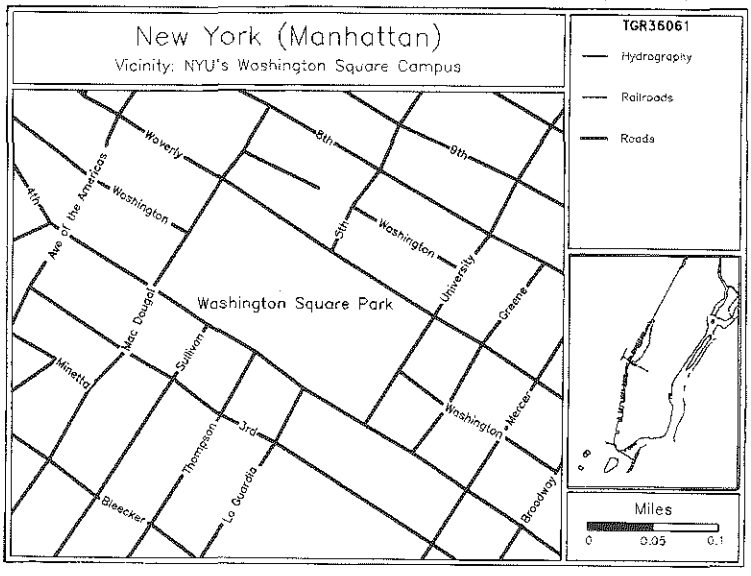
- *Population Redistribution and Economic Growth in the United States: 1870-1960.* Thirteen files of detailed demographic characteristics such as state-level estimates of the nation's inhabitants by sex, race, nativity, and age, as well as intercensal migration calculated by age, race, and sex. The basic information in this collection was obtained from the decennial censuses of the U.S., or estimated by the principal investigators, Simon Kuznets and Dorothy Swaine Thomas. (ICPSR 7753).
- *Census of Population and Housing, 1980 [United States]: Summary Tape File 1A.* New York State file only. This is a file of 321 cells organized into 59 tables aggregated to the state, county, place, census tract, or block-group level. These data were aggregated from the "complete count" or "100 percent" questions included in the 1980 Census questionnaire. (ICPSR 7941, Part 36).

continued on following page.

NYU's Spatial Analysis and GIS Group to Meet on March 24

There will be a meeting of NYU's new **Spatial Analysis and GIS Group** on Tuesday, March 24 from 3:00 to 5:00 pm in Room 23 of the Press Annex (32 Washington Place). The topic of the meeting will be *Organizing Our Special Interest Group.* The agenda will include discussions of available hardware, software and technology, current projects and applications, collaborative efforts in the area of mapping, spatial analysis, and geographic information systems. Future meeting dates also will be discussed.

Anyone with an interest is welcome to attend. Attendees of the previous meeting represented a range of academic disciplines. For more information about the Spatial Analysis and GIS Group, please see the article in the January 1992 issue of this newsletter or contact Robert Burnham (998-5622 or burnham@acfcluster.nyu.edu).



Street-level Detail of Washington Square Area. *This basic map was produced on a desktop microcomputer from a U. S. Census Bureau TIGER Line File. ATLAS*GIS, geographic information system software currently installed at ACF computer labs (see page 28), permits the manipulation of such vector-based electronic maps. In this case, the TIGER file for New York County was extracted from the 635 megabyte CD-ROM disc covering all of New York State. The county, representing Manhattan, is shown in the inset to the right. With ATLAS*GIS' zoom-in feature, any portion of Manhattan's streets and the underlying geographic attribute database can be accessed in greater detail.*

Robert Burnham
burnham@acfcluster.nyu.edu

(Robert Burnham is Professor of Educational Administration in SEHNAP and Director of its Center for Educational Technology and Economic Productivity.)

For more information about geographic information systems, please see the January 1992 issue of this newsletter. Watch for additional information on GIS in upcoming newsletters.

ICPSR Summer Programs in Social Research

The Inter-University Consortium for Political and Social Research (ICPSR) is accepting applications for attendance at its 1992 summer program in social research. Four-week courses and one-week workshops will be presented on the campus of the University of Michigan at Ann Arbor between June 29 and August 21.

Courses will vary in their level of difficulty, and will cover such topics as basic mathematics, mathematics for social scientists, quantitative historical analysis, multivariate statistical methods, utilization of data resources from the 1990 Census, logit and log-linear models, Latino research issues, and structural equation (causal) models.

The deadline for submitting applications is April 24; application forms may be obtained from ACF statistical consultants Bert Holland or Bob Yaffee, Room LC-7, Tisch Hall. Tuition and fees depend on the applicant's academic status; tuition is waived for faculty and others with PhD's. A $2,500 stipend is offered to applicants accepted for a four-week workshop devoted to quantitative analysis of crime and criminal justice statistics.

Reported by Bert Holland
holland@acfcluster.nyu.edu

ATLAS*GIS available at the ACF

ATLAS*GIS, from Strategic Mapping Inc, has been obtained by the ACF. It is available for use at the ACF computer labs. A full manual set can be borrowed from the operator at the 14 Washington Place lab for use onsite. ATLAS*GIS is PC-based software for the integration of cartographically accurate geographic data with databases of associated information. It is being used this semester by students in the Wagner School of Public Administration and is a program of particular interest to NYU's recently formed Spatial Analysis and GIS Group (see accompanying item). The software and manual set are also available for examination and use at the ACF's Faculty Microcomputer Lab (please call 998-3044 for an appointment). For more information on Geographic Information Systems (GIS), please see the January 1992 issue of this newsletter and watch for additional articles in future newsletters.

Data Base Archive, continued from previous page.

- *Historical, Demographic, Economic, and Social Data of the United States, 1790-1970.* Includes a breakdown of population by state, race, nationality, number of families, size of the family, births, deaths, marriages, occupation, religion, and general economic conditions. Partial counts over the time-span of the series are available for such diverse subjects as total number of newspapers and periodicals, capital invested in manufacturing, numbers of educational institutions and of churches, and taxes by state. The ACF obtained data for 1890-1940. (ICPSR 0003).
- *Current Population Survey (CPS) Series, May files.* The CPS is a household survey conducted monthly by the Census Bureau, and containing demographic data on various subgroups of the civilian noninstitutionalized population of the US living in households. In addition to a core of questions asked with every survey, sets of supplemental questions on special topics are asked in different months of the survey. May files include items about adult education, multiple jobholding and premium pay, and pension and retirement plan coverage. The ACF obtained CPS, May for 1978-1981 (ICPSR 7783, 7974, 8137, 8153).
- *Uniform Crime Reporting Program Data: [United States].* Data issued by the Federal Bureau of Investigation of the U.S. Dept. of Justice. The file obtained contains the Supplementary Homicide Reports for 1989. (ICPSR 9028, Part 65 only).

The ACF's Data Base Archive (DBA) acquires and stores data files for instructional and research purposes at NYU. Assistance in the use of these data files is provided by DBA staff to NYU faculty, researchers and graduate students. The DBA currently holds and catalogues some 700 studies represented by over 2000 data files. More are being acquired continually at the request of researchers at NYU. For additional information on the DBA's services, or for help in making use of them, please contact ACF consultants Bob Yaffee (998-3042) or Bert Holland (998-3401). Full descriptions of all DBA holdings may be seen by using the ACF's INFO system, and selecting FACILITIES, and then DATABASES. ■

New at the ACF's Visualization Center

An RS/6000 Workstation, KHOROS and MinneView Visualization Software

A high-performance IBM RISC workstation, a visual language system, and geometric object manipulation.

An IBM RS/6000 Model 550 workstation is available for evaluation and trial at the ACF's Visualization Center (Rooms 317-318, Warren Weaver Hall). The RS/6000 will be at the ACF for six months or more. It will be used for demonstrations and presentations by IBM and independent software vendors, and for "test drives" by members of the NYU community who are considering the purchase of an RS/6000.

The machine will also be used by ACF staff and others who wish to become familiar with the RS/6000 and AIX (IBM's version of the UNIX operating system). It will enable ACF staff members to evaluate the suitability of the RS/6000 for the NYU community, and will give NYU researchers and students access to a high-performance workstation from IBM.

The RS/6000 has 64 MB of memory, an 800 MB hard disk, a three-dimensional 24-bit high performance graphics processor, an 18-inch color monitor, a CD-ROM drive, an 8mm tape drive, a 3.5" diskette drive, a mouse, and an Ethernet controller.

A variety of software will be available on the machine. Currently, *AVS*, BioSym's *InSight*, *Mathematica* and *NCAR GKS Graphics* are being installed. For programmers, there are C and FORTRAN compilers, and the *Silicon Graphics GL* graphics library. The ACF staff is open to requests for other software which people would like to see running on the system.

Members of the NYU community who are interested in using the RS/6000 can obtain an account by completing an ACF Account Request form and sending it to the ACF Accounts Office (Room 305 Warren Weaver Hall). For further information on the RS/6000, please contact John Kesich (998-3047 or by E-mail—see below).

Note: A presentation by representatives of BioSym will take place in the ACF's Visualization Center on March 19th from 10 am to 6 pm. Contact Ed Friedman (998-3051 or at friedman@nyu.edu) for details.

John Kesich
kesich@nyu.edu

ACF's Photo-Typesetting Service

The ACF's new Varityper 4000 is a state-of-the-art, PostScript-based electronic photo-typesetting system. Also known as an *imagesetter*, the Varityper produces camera-ready, publication quality output on resin-coated paper and/or film, at resolutions of up to 2400 dots-per-inch, or eight times the quality of a standard laser printer.

Varityper output is available as an overnight service from the ACF; a fee, currently estimated at $2.50 per page, will be charged to cover the cost of materials. Varityper users are able to send files to the Varityper directly from their on-campus computers via NYU-NET, the NYU network; however, before printing, they will need to make arrangements with John Kesich at the ACF (kesich@nyu.edu or 998–3047).

Current and upcoming issues of a number of publications on-campus, including the NYU Today Hotline and this newsletter, are being prepared using the imagesetter. For more information on the Varityper and the ACF's new photo-typesetting service, see the January 1992 issue of this newsletter.

KHOROS: Information Processing and Data Visualization

A comprehensive scientific visualization software system from the KHOROS Group at the University of New Mexico in Albuquerque is available for use on the Silicon Graphics IRIS workstations in the ACF's Visualization Center (Rooms 317-318 in Warren Weaver Hall).

KHOROS includes a visual programming language, code generators for extending the visual language and adding new application packages, an interactive editor and image display subsystem, an extensive library of image processing, numerical analysis and signal processing routines, a two-dimensional and three-dimensional subsystem for plotting, and much more.

KHOROS can be installed on many different UNIX-based graphics workstations, such as the Silicon Graphics IRIS, the DEC 5000, MIPS 3000, IBM RS/6000, and SUN SPARCstations. The software can also run on UNIX systems that support both X11 Release 4 windowing protocols and

continued on following page

Visualization, continued from previous page.
the Project Athena *widgets*. These include Cray machines of various flavors.

The entire system is available on tape or via anonymous FTP from the University of New Mexico. It is considered shareware, and individuals or institutions using the software are encouraged, but not required, to join the KHOROS consortium. The package comes with extensive documentation and a comprehensive set of software tools and utilities. It requires from 100 to 200 megabytes of disk storage depending on how much of the code is kept online.

For more information, please contact Ed Friedman at 998-3051 or friedman@nyu.edu.

Ed Friedman
friedman@nyu.edu

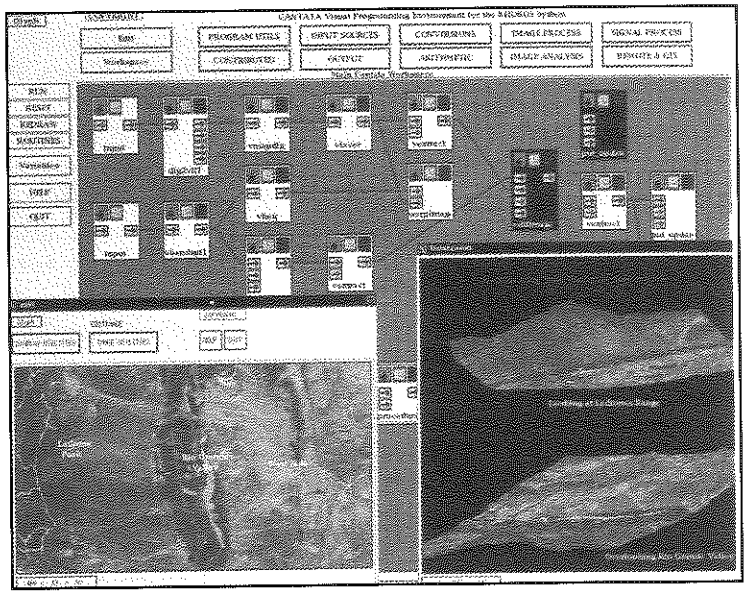
MinneView Available in the ACF Visualization Center

MinneView, an interactive scientific visualization package from the The Geometry Center at the University of Minnesota, is available for use on the Silicon Graphics IRIS workstations in the ACF Visualization Center, Rooms 317-318, Warren Weaver Hall.

The software is used primarily to display and manipulate three-dimensional geometric objects. These objects can be translated, rotated, viewed in stereo, and rendered as wire-frame or shaded surfaces, using a variety of shading models. Currently, MinneView operates only on Silicon Graphics IRIS workstations.

For more information on MinneView, contact Ed Friedman (998-3051 or friedman@nyu.edu).

▼ *The KHOROS scientific visualization system, shown below, is an open environment for information processing, data visualization, and software development. This sample screen reprinted with the permission of Digital News.*



Research program at Geometry Center. The Geometry Center at the University of Minnesota is a computing environment supporting research, software, tool and application development in mathematics and computer science, mathematical visualization, video animation production, and math education. The Center is offering apprenticeships, postdoctoral fellowships and research professorships open to those involved in all branches of mathematical sciences. Copies of a flyer giving further information can be obtained from the ACF Information Services Group (Room 306, Warren Weaver Hall, 998-3036).

Ed Friedman
friedman@nyu.edu

NYU Colloquia, continued from page 3.

Computer animation, GIS, and more. A talk by Professor Jacob Schwartz (Computer Science, FAS), entitled "Computer Animation as a Tool for Exposition and Education," is also planned, but as we go to press, a date for the talk has not yet been set. Arrangements for a talk on applications of Geographic Information Systems are also being made.

Technical seminars. Also planned is a series of somewhat more technical talks sponsored by the ACF, the Courant Institute of Mathematical Sciences, and other academic units within the University, depending on the topic. Techniques and considerations in scientific visualization have been an important focus of recent seminars in this series.

As we go to press, the next presentation will be by Stephen Jacobson, who will discuss and demonstrate an image-oriented database access system developed by the Advanced Technology Planning Group at the University of California at Berkeley. This two-part technical seminar will take place on Thursday, March 26 at 4 pm and on Friday, March 27 at 10 am, in Room 313 Warren Weaver Hall.

For further information...

Announcements of events are mailed to NYU faculty several weeks prior to each presentation and will also appear in the NYU Today Hotline, a biweekly publication of the NYU Information Center. For additional information about any of the talks mentioned here, or to have your E-mail address added to a colloquium mailing list, please call the ACF information line at 998-3333. ■

Notes for Users of the ACFcluster: Recently Added Services and Updates

by Stephen Tihor
tihor@acfcluster.nyu.edu
with Estelle Hochberg
hochberg@acfcluster.nyu.edu

The following are a few of the recent software changes and additions on the ACF's cluster of VAX/VMS computers. Further notes will be included in the next issue of this newsletter.

A library information system. A new version of LIBS has been installed on the cluster. LIBS is a public domain "wrapper" procedure that provides access to many of the online library catalogs and information systems in the United States and around the world. To start it up, enter the command **LIBINFO** at the VMS "$" prompt. A menu will appear, offering you a selection of services from which to choose. (The command LIBS will also work, but beware of dropping the "s", as "LIB" will start up a DEC programming tool, instead.)

LIBS is maintained at Sonoma State University, by Mark Resmer. It is based on the library and information systems directories maintained by Art St. George, University of New Mexico and other sources. For additional information, enter the command **HELP LIBS** at the VMS $ prompt.

Online help with system error messages. A new facility recently added to the ACFcluster will help VMS users better interpret the error messages that they sometimes receive from the system. VMS system error messages are in the form

%facility-l-ident, text

where **facility** is the name of the product generating the message (for example, CLI for the Command Language Interpreter); **l** is the one-letter code indicating the severity of the error (*I — informational, E — error, S — success, F — severe error, W — warning*); **ident** is code for the message text; and **text** is a short description of the nature of the problem.

Now you can receive a more complete explanation by entering the command **HELP ERROR ident**, replacing **ident** with the appropriate part of the error message you have received.

Some other software updates. Recent software updates on the cluster include Version 2.0 of the IMSL Libraries of mathematical and statistical subroutines; BASIC Version 3.5, COBOL Version 4.4 Revision A, FORTRAN Version 5.7, FORTRAN/High Performance Option Version 1.3, and VMS 5.4-3. For online information on IMSL, enter the command HELP MATH IMSL. For the other products mentioned, type **HELP productname**, replacing productname as appropriate (e.g., **help fortran/hpo**). Note that the Fortran/HPO compiler can now be asked to identify sections of your code that are suitable for vectorization and parallelization.

Internet CB-Style Conference Facility. A multi-site Citizens' Band-style emulation facility, called IRC, is available for users of the ACFcluster. This facility makes possible real-time, live conversations via the Internet with users at other locations. One group of NYU students is using it to "meet" with their thesis advisor at UCB who is visiting another university.

Limited support is available in the form of online documentation: Type **help IRC** to get it. Be sure especially to look at the subtopics LOGICAL_NAMES and COMMANDS. To start IRC, you simply enter **IRC**.

IRC commands start with a forward slash (/) and must be entered in all capital letters. Basic IRC commands are **/LIST** to list all channels which are active, **/JOIN** channelname to join a specific channel, and **/EXIT** to leave the system. ■

At the National Supercomputer Centers

The National Science Foundation (NSF) supports a network of national supercomputer centers offering computer systems capable of performing calculations at very high speeds.

Access to the Centers. The ACF staff has experience in the use of supercomputers at some of these centers and provides assistance to NYU staff and students in applying for and obtaining computing resources on them. For further information, to set up an appointment with a specialist to discuss your computing needs or to submit a request for resources at these centers, contact the ACF Accounts Office (Room 305 Warren Weaver Hall, 998-3035).

News from the Cornell Theory Center. There are some recent additions to the parallel processing resources at the Center for Theory and Simulation in Science and Engineering at Cornell University. The Center's Scalable Cluster of RISC Systems (SCRS) currently consists of 11 RS/6000 workstations connected via high speed networking. A new Kendall Square machine, the KSR-1, is being tried by selected users; this new MIMD machine has 32 processors offering 1.28 Gflops peak aggregate performance, 1 Gbyte of shared memory, and 1,000 Gbytes of addressable memory. A Parallel Visualization Server (PVS) machine, with 32 processors performing up to 2.5 Gflops, is also available for a limited number of users. The Center is a national center of expertise for IBM's PVS and the portable visual programming interface Data Explorer.

Reported by Ed Friedman and Frances Bauer

The conferences, expositions and other events listed in this section focus on different aspects of the use of computers in higher education. We welcome your information on similar events coming up through Dec. 1992: please mail it to Karen Strauss at the ACF (306 Warren Weaver Hall, strauss@acfcluster.nyu.edu).

Computing Strategies Across the Curriculum, April 3 and 4 at the University of Vermont. For further information, please see the January issue of this newsletter. or CSAC, University Computing Services, 238 Waterman Building, University of Vermont, Burlington, VT 05405-0160, Phone: (802) 656-3316, Fax: (802) 646-8429, Internet: CSAC@UVMVM.EDU or CSAC@UVMVM.BITNET

East-West Conference on Emerging Computer Technologies in Education, April 6 to 9 in Moscow, Russia. The conference plans will provide a forum for the exchange of ideas between Eastern and Western scientists and to present to the Soviet educational community the current state-of-the-art on the theory and practice of using emerging computer-based technology in education. It is expeceds to cover artificial intelligence and education, educational multimedia and hypermedia, learning environments, microworlds and simulation.

The Conference is organized and sponsored by the Association for the Advancement of Computing in Education (AACE), the International Centre for Scientific and Technical Information (ICSTI), and the Soviet Association for Artificial Intelligence (SAAI).

For further information, contact East-West Conference on Emerging Computer Technologies in Education, International Centre for Scientific and Technical Information, Kuusinen str. 21b, Moscow 125252, Russia, Internet: EASTWEST@PLB.ICSTI.SU or EASTWEST%PLB.ICSTI.SU@USSR.EU.NET (Telex: 411925 MCNTI, FAX: +7 095 943 0089)

GIS: From Space to Territory, September 21 to 23 at the Palazzo dei Congressi in Pisa, Italy. There is a call for papers which must be received by March 31, a four-week extension from the original deadline.

The official languages of the conference will be English and Italian. For more details on the nature and scope of the conference, contact David Mark via the Internet at DMARK@SUN.ACSU.BUFFALO.EDU or Dr.Andrew Frank, NCGIA, University of Maine, Bordman Hall 348,Orono, ME 04469; Fax: (207) 581-2206, Internet: FRANK@MECAN1.MAINE.EDU

Second Annual International Conference on Computer Graphics in Science and Arts (GraphiCon'92), September 28 to October 2 in Moscow. Sponsored by the Moscow SIGGRAPH and GrafO Soviet Computer Graphics Society in cooperation with ACM SIGGRAPH and Eurographics, the primary emphases of *GraphiCon'92* are communications, East-West cooperation, and information exchange. The conference includes: tutorials, papers, an exhibition, an art show, a computer theater, panels and workshops. For further information, contact *GraphiCon'92* Conference Secretariat, Keldysh Institute of Applied Mathematics, 4 Miusskaya Square, Moscow, 125047, Russia, Phone: (+7 095) 972-3642, Fax: (+7095) 972-0737 or Internet: G92@KELDYSH.MSK.SU

Additional Events:

April 30 - May 1. Symposium on Computers in Health Care Education, Philadelphia, PA. For further information, contact: GAROFALO@SHRSYS.HSLC.ORG

April 7 - 10. EP92 (Conference on Electronic Publishing), Lausanne, Switzerland. For further information, contact: EP92@ELSI.EPFL.CH

May 3-7. CHI'92 Workshops: 1992 ACM Conference on Human Factors and Computing Systems, Monterey, CA. For further information contact PSANDERS@PSYCH.UIUC.EDU

May 4-7. Conference on Computing for Social Sciences, Ann Arbor, MI. For further information see the January issue of this newsletter for a description of this conference or contact: USERLD52@UMICHUM or ALBERT_F._ANDERSON@UM.CC.UMICH.EDU

May 12-14. USING'92: "Open Systems Solutions for the Telecom Industry," Philadelphia, PA. Contact: DUKE@PYUXV.CC.BELLCORE.COM

June 15-18. INET'92 (International Networking Conference), Kobe, Japan. Contact: inet92@educom.edu

June 17-20. Fourth International Conference On Computers and Learning (ICCAL'92), Acadia University, Nova Scotia, Canada. Contact: Dr. Ivan Tomek, ICCAL'92 Chair, Jodrey School of Computer Science, Acadia University, Wolfville, Nova Scotia, Canada BOP 1XO, Phone: (902) 542-2201, extension 467, Fax:(902) 542-7224, Internet: ICCAL@ACADIAU.CA

June 17-20. Macintosh Technical Conference'92, Ann Arbor, MI. Contact: WALDEMAR@AI.MIT.EDU or EXPOTECH@APPLELINK.APPLE.COM

July 7-9. 3rd International Conference on Computers for the Handicapped, Vienna, Austria. For further information, please contact: +43-1-5120235, (Fax) +43-1-5137735

For upcoming Colloquia on Computers in Higher Education and ACF sponsored technical seminars, see page 3. NYU's Spatial Analysis and Geographic Information Systems Group meets on March 24 (see page 27).

Important ACF Telephone Numbers

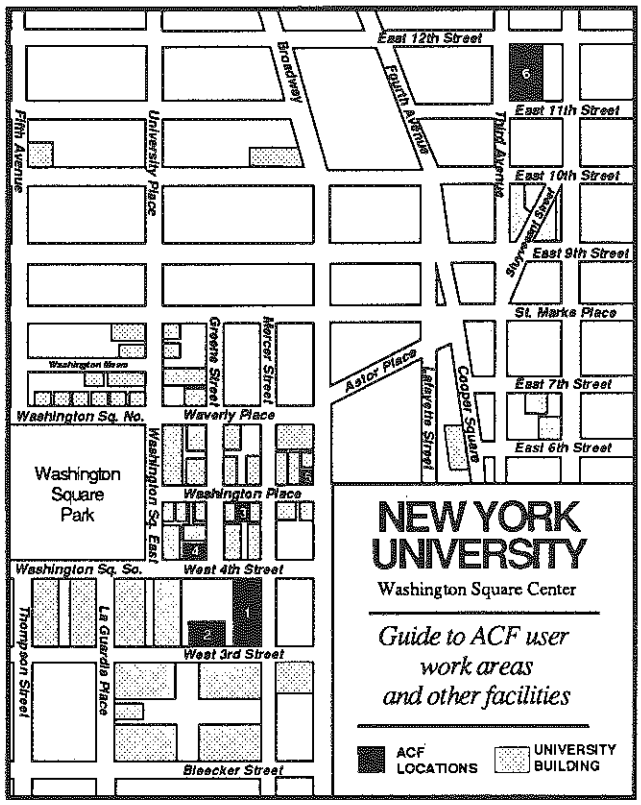
General Information (ACF)	998-3333
Account Information	998-3035
Computer Status (recording)	998-3433
Computer Documentation	998-3036
Faculty Microcomputer Lab	998-3044
Tape Librarian	998-3452
Applications Consultants:	
14 Washington Place	998-3396
Tisch Hall	998-3434
Education Building	998-3435
Warren Weaver Hall	998-3037
Third Ave. North Res. Hall	998-3500
Computer Operators:	
14 Washington Place	998-3457
Tisch Hall	998-3409
Education Building	998-3421
Warren Weaver Hall	998-3456
Third Ave. North Res. Hall	998-3504

Dial-in Access to ACF Computers

(Via NYU-NET, NYU's campus-wide network.)

If calling from	Dial	For (bps)
NYU	53600	300 - 2400
Off Campus	995-3600	300 - 2400
	995-4335*	300 - 1200

*This number is recommended if you are using an old-style modem without error-correcting.



1. Warren Weaver Hall
251 Mercer St., 3rd floor

2. Tisch Hall
40 W. 4th St., lower concourse
(Rooms LC-7 and LC-8)

3. 14 Washington Pl.
basement

4. Education Building
35 W. 4th St., second floor

5. 715 Broadway
(IBM tapes only)

6. Third Ave. No. Residence Hall
75 Third Ave., basement

NYU Trolley route includes (6); weekdays, every 15 minutes during the academic year. ACF microcomputer labs are at (2), (3), (4), and (6).

Hours at ACF Sites

	Regular Hours			Holiday Hours*	
	Mon. - Fri.	Sat.	Sun.	Mon. - Fri.	Sat.
User Work Areas:					
14 Washington Place	8:30 a - 11:30 p	8:30 a - 5:30 p	closed	10:30 a - 5:30 p	10:30 a - 5:30 p
Tisch Hall	8:30 a - 11:30 p	8:30 a - 5:30 p	closed	10:30 a - 5:30 p	10:30 a - 5:30 p
Education Building	8:30 a - 11:30 p	8:30 a - 5:30 p	closed	10:30 a - 5:30 p	10:30 a - 5:30 p
Third Ave. North	10:30 a - 1:30 a	10:30 a - 5:30 p	10:30 a - 5:30 p	10:30 a - 5:30 p	10:30 a - 5:30 p
Consultants:					
14 Washington Place	9 a - 9 p	10 a - 5 p	closed	(To be announced)*	
Tisch Hall	9 a - 9 p	9 a - 5 p	closed	(To be announced)*	
Education Building	8:30 a - 9 p	9 a - 5 p	closed	(To be announced)*	
Third Ave. North	10:30 a - 1:30 a	10:30 a - 5:30 p	10:30 a - 5:30 p	(To be announced)*	

* A final holiday schedule will be posted via our online news and bulletin board facilities. Note: The ACF offices in Warren Weaver Hall are closed on University holidays.

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